DISCLAIMER

The information contained in Victoria University’s 2010 Faculty of Health, Engineering and Science Handbook was current at 31 August 2009.

In today’s university environment, changes to courses occur far more frequently than in the past. For current information on Victoria University’s courses, readers are advised to access the University’s online courses database at www.vu.edu.au/courses

If you have difficulty in accessing this material electronically, please phone (03) 9919 6100 for assistance.

IMPORTANT INFORMATION

The course details in this handbook (plus details of all other Victoria University courses) can also be searched on the University’s online courses database at www.vu.edu.au/courses

This handbook can be downloaded as a pdf file from the Victoria University website at www.vu.edu.au/courses/handbooks

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HOW TO USE THIS HANDBOOK

Victoria University’s 2010 Faculty of Health, Engineering and Science Handbook is designed to provide students with detailed information on course structures and subject details for undergraduate and postgraduate courses offered by the faculty in 2010.

NOTE: Courses available to International students are marked with the (I) symbol.

The definition of fields used in course tables throughout this handbook include:

Credit Point — the number of credit points a subject contributes towards the total points needed to complete a course.

PLEASE NOTE

This handbook provides a guide to courses available within Victoria University’s Faculty of Health, Engineering and Science in 2010. Although all attempts have been made to make the information as accurate as possible, students should check with the faculty that the information is accurate when planning their courses.

NOTE: Prospective students are strongly advised to search the University’s online courses database at www.vu.edu.au/courses for the most up-to-date list of courses.

This handbook includes descriptions of courses that may later be altered or include courses that may not be offered due to unforeseen circumstances, such as insufficient enrolments or changes in teaching personnel. The fact that details of a course are included in this handbook can in no way be taken as creating an obligation on the part of the University to teach it in any given year or in the manner described. The University reserves the right to discontinue or vary courses at any time without notice.

OTHER INFORMATION

Information about course fees, articulation and credit transfer, recognition of prior learning, admission and enrolment procedures, examinations, and services available to students can be accessed on the University’s website or by contacting the University directly.
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CHAPTER FOR ENVIRONMENTAL SAFETY AND RISK ENGINEERING

Below are details of courses offered by the Centre for Environmental Safety and Risk Engineering in 2010. This information is also available online on the University's searchable courses database at www.vu.edu.au/courses

NOTE: Courses available to International students are marked with the (I) symbol.

GRADUATE DIPLOMA IN BUILDING FIRE SAFETY AND RISK ENGINEERING
Course Code: FGQ8
Campus: Werribee

Course Objectives: The course aims to produce professionals who are familiar with fire science and technology fundamentals, who can apply rational engineering principles and techniques to identify cost-effective fire safety system designs for buildings, and will be familiar with the content and application of fire engineering design codes.

The course aims to produce professionals who are familiar with fire science and technology fundamentals, who can apply rational engineering principles and techniques to identify cost-effective fire safety system designs for buildings, and will be familiar with the content and application of fire engineering design codes.

Career Opportunities: Fire safety and risk engineer.

Course Duration: To be advised.

Admission Requirements: To qualify for admission to the course an applicant must have successfully completed a degree in engineering or a degree in science or building surveying. A corresponding diploma having equivalent content of the relevant technical subjects will also be considered. Relevant industrial experience is required. Applicants must either have previously studied, or demonstrated a sound basic knowledge of the following topics: fluid dynamics, heat transfer, properties of materials and structural behaviour. Bridging subjects may be required to overcome any inadequacies. A letter of recommendation and an interview may be required. Provision will be made to enrol a limited number of students in the course who do not fully meet the required admission standards, but who have extensive relevant experience and demonstrated aptitude for high achievement. An interview will be required in this case.

Course Structure: The course is offered on a part-time basis and in block modules over two years. Students must complete 120 credit points. The maximum time period to complete the course is six years.

Year 1

VQB5611 RISK ASSESSMENT AND HUMAN BEHAVIOUR 12
VQB5621 FIRE GROWTH, DETECTION AND EXTINGUISHMENT 12
VQB5632 SMOKE AND FIRE SPREAD, FIRE SAFETY SYSTEM DESIGN 12
VQB5642 PERFORMANCE CODES METHODOLOGY AND STRUCTURE 12

Year 2

VQB5751 FIRE TECHNOLOGY MODELLING 12
VQB5761 FIRE SAFETY SYSTEMS MODELLING 12
VQB5772 FIRE SAFETY SYSTEM DESIGN 12
VQB5782 FIRE SPREAD AND FIRE SAFETY SYSTEM DESIGN PROJECT 12

Assessment:
Assessment is by a combination of written projects, assignments, submissions, laboratory work and oral presentation. Distribution of marks among each aspect of assessment is determined individually for each subject.

Master of Engineering (Building Fire Safety and Risk Engineering)
Course Code: EMQ8

Campus: Werribee

Course Objectives: The course provides opportunities for professional people to develop advanced technical skills in a specialist discipline; develop their understanding of legislation and management relevant to their employment; develop ability to plan and co-ordinate and complete complex projects; apply and extend research and reporting skills and gain specialist knowledge of a topic relevant to their employment.

The aim of the course is to provide students with a basic grounding in the principles and practice relevant to business in today's corporate world. It is anticipated that students will transfer into a prescribed business degree program thus deepening knowledge in particular areas and developing a specialist skill base.

Career Opportunities: Fire safety and risk engineer.

Course Duration: To be advised.

Admission Requirements: To qualify for admission to the course applicants are expected to have completed a Graduate Diploma in Building Fire Safety and Risk Engineering with honours average.

Course Structure: The course is offered over four years on a part-time basis or its full-time equivalent. Students must complete 192 points. Eight approved subjects of twelve credit points, each from the Graduate Diploma in Building Fire Safety and Risk Engineering, Industrial Experience of forty eight credit points, and a minor thesis/project of forty eight credit points for one semester or twenty four credit points for two semesters.

Year 1

Semester One

VQB5611 RISK ASSESSMENT AND HUMAN BEHAVIOUR 12
VQB5621 FIRE GROWTH, DETECTION AND EXTINGUISHMENT 12

Semester Two

VQB5632 SMOKE AND FIRE SPREAD, FIRE SAFETY SYSTEM DESIGN 12
VQB5642 PERFORMANCE CODES METHODOLOGY AND STRUCTURE 12

Year 2

Semester One

VQT5790 INDUSTRIAL EXPERIENCE (FULL-TIME) 48
(over one semester) or
VQT5791 INDUSTRIAL EXPERIENCE (PART-TIME) 24
(per semester for two semesters)

Year 3

Semester One

VQB5751 FIRE TECHNOLOGY MODELLING 12
VQB5761 FIRE SAFETY SYSTEMS MODELLING 12

Semester Two

VQB5772 FIRE SAFETY SYSTEM DESIGN 12
VQB5782 FIRE SPREAD AND FIRE SAFETY SYSTEM DESIGN PROJECT 12

Guidelines on the use of electronic calculators and other electronic storage devices in examinations are provided in individual subject outlines distributed to students within the first two weeks of semester and included on final examination papers. Electronic calculators and other electronic storage devices will not be permitted where the above provisions have not been made.
Year 4

VQT6050 BUILDING FIRE RESEARCH (FULL-TIME) 48
(over one semester) or
VQT6060 BUILDING FIRE RESEARCH (PART-TIME) 24
(per semester for two semesters)

Assessment
Assessment is by a combination of written projects, assignments, submissions, laboratory work and oral presentations and by the satisfactory completion of a thesis. Distribution of marks for each aspect of the assessment is determined individually for each subject.

Guidelines on the use of electronic calculators and other electronic storage devices in examinations are provided in individual subject outlines distributed to students within the first two weeks of semester and included on final examination papers. Electronic calculators and other electronic storage devices will not be permitted where the above provisions have not been made.

GRADUATE CERTIFICATE IN PERFORMANCE-BASED BUILDING & FIRE CODES

Course Code: ETQB

Campus: Werribee

Course Objectives: The course aims to enable building surveyors and other allied professions to:

- make professional use of performance-based building codes;
- introduce the concepts and alternative acceptable frameworks for performance-based codes, with particular, but not exclusive, emphasis given to fire safety engineering design;
- provide appropriate knowledge and skills necessary for the assessment and application of performance-based and fire codes;
- develop a professional approach to performance-based codes and a recognition of when to assess designs which are within a persons field of expertise and when to refer designs onto a more appropriately qualified assessor;
- develop an appreciation of the legal, statutory and design integrity requirements and the need for compliance of the design assumptions throughout the operational life of the building.

The course aims to enable building surveyors and other allied professions to:

- make professional use of performance-based building codes;
- introduce the concepts and alternative acceptable frameworks for performance-based codes, with particular, but not exclusive, emphasis given to fire safety engineering design;
- provide appropriate knowledge and skills necessary for the assessment and application of performance-based and fire codes;
- develop a professional approach to performance-based codes and a recognition of when to assess designs which are within a persons field of expertise and when to refer designs onto a more appropriately qualified assessor;
- develop an appreciation of the legal, statutory and design integrity requirements and the need for compliance of the design assumptions throughout the operational life of the building.

Career Opportunities: Fire safety and risk engineer.

Course Duration: To be advised.

Admission Requirements: To qualify for admission to the course an applicant must have successfully completed a diploma in Building Surveying or an equivalent qualification and at least two years of relevant professional experience. Candidates with other academic qualifications can be admitted to the course provided they can demonstrate an equivalent combination of additional relevant professional experience and qualification. A letter of recommendation and an interview may be required. Graduates of the course may be offered advanced standing in the Graduate Diploma in Building Fire Safety and Risk Engineering.

Course Structure: The course is offered on a part-time basis over one year, and is offered in block modules (four blocks of four days, spread throughout the year). Students must complete 60 credit points. The maximum time period in which to complete the course is three years.

- VQB5611 RISK ASSESSMENT AND HUMAN BEHAVIOUR 12
- VQB5621 FIRE GROWTH, DETECTION AND EXTINGUISHMENT 12
- VQB5632 SMOKE AND FIRE SPREAD, FIRE SAFETY SYSTEM DESIGN 12
- VQB5642 PERFORMANCE CODES METHODOLOGY AND STRUCTURE 12

Assessment
Assessment is by a combination of assignments and examination. Distribution of marks among each aspect of assessment is determined individually for each subject.

Guidelines on the use of electronic calculators and other electronic storage devices in examinations are provided in individual subject outlines distributed to students within the first two weeks of semester and included on final examination papers. Electronic calculators and other electronic storage devices will not be permitted where the above provisions have not been made.
SUBJECTS

Below are subject details for courses offered by the Centre for Environmental Safety and Risk Engineering in 2010. IMPORTANT NOTICE: Not all elective subjects for courses offered by the school are listed below. There are numerous elective possibilities that the school can choose to offer and those selected will vary from year to year. Details of these electives will be advised by the school.

VQB5611 RISK ASSESSMENT AND HUMAN BEHAVIOUR
Locations: Werribee,
Pre-requisites: Nil
Descriptions: The subject introduces students to basic fire engineering design concepts through presentation of a range of fire safety evaluation methods including timeline analysis and provides students with the necessary knowledge about occupant communication and response submodels and subsystems as a basis for assessing the necessary input data for a risk assessment model.


Credit Points: 12
Learning Outcomes: To be advised.
Class Contact: To be advised.
Assessment: To be advised.

VQB5621 FIRE GROWTH, DETECTION AND EXTINGUISHMENT
Locations: Werribee,
Pre-requisites: Nil
Descriptions: The subject provides students with basic information on fire technology and explains the initiation and development of fires including an understanding and facility in the application of the range of detection systems and of manual and automatic extinguishing subsystems in terms of: mechanism of extinguishment; detection performance; component modelling; response time assessment; reliability criteria, redundancy and the effect of maintenance; performance testing. The subject covers the combustion process and the fire triangle. Heat transfer mechanism, combustion of gases and vapours and fire plumes. Combustion of liquids and solids, fire toxicity and products of combustion. Fire behaviour of materials and products and fire retardants, fire test methods. Fire initiation and development. Pre and Post flashover enclosure fires. Mathematical modelling of enclosure fires (zone and field models). Management of fire initiation and development and implications to performance design. Detection and extinguishment, principles of detection and alarm. Fire detection and alarm systems, water based extinguishment. Fire engineering design for extinguishment; system reliability. Fire brigade response and operations.

Credit Points: 12
Learning Outcomes: To be advised.
Class Contact: To be advised.
Assessment: To be advised.

VQB5632 SMOKE AND FIRE SPREAD, FIRE SAFETY SYSTEM DESIGN
Locations: Werribee,
Pre-requisites: Nil

Credit Points: 12
Learning Outcomes: To be advised.
Class Contact: To be advised.
Assessment: To be advised.

VQB5642 PERFORMANCE CODES METHODOLOGY AND STRUCTURE
Locations: Werribee,
Pre-requisites: Nil
Descriptions: The subject introduces the student to the principles, methodology and scope of performance based codes including a conceptual framework and historical background and provides the student with an understanding of the structure of performance design and approval and background and refresher material essential to an understanding of further subjects in the course.Conceptual framework of performance regulations; life safety, illness and injury, health, safety and amenity and asset protection. Historical background, ISO9624, NKBR, international approaches, NZ model, equivalency concept. State legislation and the model building act (administrative framework). The Performance Based Code of Australia and Australian Standards (technical framework). Process and procedural matters; legal issues, documentation, joint and several tortfeasor liability. Integrated approvals; impact of performance regulation on other approvals. Fire Code Reform Centre (FCRC)

Credit Points: 12

Learning Outcomes: To be advised.

Class Contact: To be advised.


Assessment: To be advised.

VQB5751 FIRE TECHNOLOGY MODELLING

Locations: Werribee,

Pre-requisites: VQB5621 and VQB5632

Descriptions: The subject provides students with an understanding of the details of modelling fire growth and spread in buildings: development of the design fire; fire spread models; smoke movement models; atriums and large spaces; network modelling; computational fluid dynamics models; post-flashover compartment fire models; and model validation.

Credit Points: 12

Learning Outcomes: To be advised.

Class Contact: Equivalent to three hours of lectures per week for thirteen weeks.


Assessment: Four written assignments, 10%, 10%, 30% and 50%. Page limits: 10% - four pages, 30% - 12 pages, 50% - 20 pages.

VQB5761 FIRE SAFETY SYSTEMS MODELLING

Locations: Werribee,

Pre-requisites: VQB5611, VQB5621 and VQB5632

Descriptions: The subject provides students with an understanding of the details of modelling of active, and passive, building fire safety subsystems, and the details of human behaviour modelling detection and sprinkler operation predictions; modelling of barrier failure; structural fire safety; human behaviour modelling; suppression models; and a fire brigade intervention model.

Credit Points: 12

Learning Outcomes: To be advised.

Class Contact: Equivalent to three hours of lectures per week for thirteen weeks.


Assessment: Four written assignments, 10%, 10%, 30% and 50%. Page limits: 10% - four pages, 30% - 12 pages, 50% - 20 pages.

VQB5772 FIRE SAFETY SYSTEM DESIGN

Locations: Werribee,


Descriptions: The subject provides a description of various approaches used for the design of the safety in buildings, with particular emphasis placed on a fire safety system (FSS) performance model. The FSS model uses a risk assessment methodology to assess the risk to life safety and the expected losses, and to incorporate this risk assessment as part of the design procedure for the fire safety in buildings. Introduction, alternative design approaches, fire engineering design code framework, risk assessment methodology, and description of a fire safety system (FSS) model and its parameters; risk to life and economic submodel. Description of the various submodels comprising the FSS model—namely, fire initiation and growth submodel, smoke spread submodel, fire spread submodel, occupant communication and avoidance submodel, fire brigade submodel. In-service performance. Application of fire safety system models.

Credit Points: 12

Learning Outcomes: To be advised.

Class Contact: Three hours of lectures per week for one semester.


Assessment: Assessment will be made on the basis of assignments. Four assignments, each 25%. Supplementary assessment will not be available.

VQB5782 FIRE SPREAD AND FIRE SAFETY SYSTEM DESIGN PROJECT

Locations: Werribee,

Pre-requisites: VQB5632 - SMOKE AND FIRE SPREAD, FIRE SAFETY SYSTEM DESIGN

Descriptions: The first part of this subject provides an understanding of the mechanisms of and impediments to the spread of fire in buildings, and to provide a knowledge of the behaviour, analysis and design of the available subsystems for the management of fire spread. Introduction and overview; reliability of smoke and fire management subsystems; mechanisms, timing and probability of fire spread; modelling fire spread; fire spread management subsystem; design of fire spread subsystem. In the second part of the subject Fire Safety System design project will apply knowledge gained during the course to the analysis and design of a cost-effective fire safety system for a proposed building project.

Credit Points: 12

Learning Outcomes: To be advised.

Class Contact: Three hours of lectures per week for one semester.

Required Reading: A very comprehensive set of course notes is provided for each subject and topic; these contain further references and reading material. DiNenno,

Assessment: Assessment will be on the basis of submission of required assignments and a project. Assessment of the Fire Safety System Project will be on the basis of submission of a major report. Project submission, 70%; assignments, 30%. Supplementary assessment will not be available.

VQT5790 INDUSTRIAL EXPERIENCE (FULL-TIME)

Locations: Werribee,

Pre-requisites: Nil

Descriptions: No formal content; students will be required to provide evidence of appropriate industrial experience in Australia, acceptable to the Head of the Centre.

Credit Points: 48

Learning Outcomes: To be advised.

Class Contact: Regular contact will be made by arrangement with the supervisor.

Required Reading: To be advised by lecturer.

Assessment: To be advised.

VQT6050 BUILDING FIRE RESEARCH (FULL-TIME)

Locations: Werribee,

Pre-requisites: Students are normally expected to have completed the Graduate Diploma in Building Fire Safety and Risk Engineering with an Honours average.

Descriptions: The thesis will normally be from 15,000 to 25,000 words. It will report an independently conducted research which demonstrates the student’s ability to clearly define a problem, to undertake a detailed literature search and review the literature on the topic area. The student shall, where appropriate, demonstrate both the ability to develop and/or apply models to study the problem together with appropriate data selection, collection and analysis. Students will normally be supervised by an academic member of staff and by a co-supervisor external to the Centre. The external supervisor will be an academic from the University or from another institution or a practitioner.

Credit Points: 48

Learning Outcomes: To be advised.

Class Contact: Regular contact will be made by arrangement with the supervisor.

Required Reading: To be advised by lecturer.

Assessment: Before commencing actual research, students must complete, to the satisfaction of the research supervisor, a paper critically reviewing the literature and providing a clear outline of the proposed research methodology and resources required to complete the thesis. The final thesis will be assessed by two examiners with expertise in the area of the research. These examiners may be internal or external to the Centre or the University and will not include the supervisors. Students may be asked to present themselves for oral or written examination by these examiners, at the examiner’s discretion.

VQT6060 BUILDING FIRE RESEARCH (PART-TIME)

Locations: Werribee,

Pre-requisites: Students are normally expected to have completed the Graduate Diploma in Building Fire Safety and Risk Engineering with an Honours average.

Descriptions: The thesis will normally be from 15,000 to 25,000 words. It will report an independently conducted research which demonstrates the student’s ability to clearly define a problem, to undertake a detailed literature search and review the literature on the topic area. The student shall, where appropriate, demonstrate both the ability to develop and/or apply models to study the problem together with appropriate data selection, collection and analysis. Students will normally be supervised by an academic member of staff and by a co-supervisor external to the Centre. The external supervisor will be an academic from the University or from another institution or a practitioner.

Credit Points: 24

Learning Outcomes: To be advised.

Class Contact: Regular contact will be made by arrangement with the supervisor.

Required Reading: To be advised by lecturer.

Assessment: Before commencing actual research, students must complete, to the satisfaction of the research supervisor, a paper critically reviewing the literature and providing a clear outline of the proposed research methodology and resources required to complete the thesis. The final thesis will be assessed by two examiners with expertise in the area of the research. These examiners may be internal or external to the Centre or the University and will not include the supervisors. Students may be asked to present themselves for oral or written examination by these examiners, at the examiner’s discretion.
VQT8001 RESEARCH THESIS 1 FULL TIME

Locations: To be advised.

Pre-requisites: To be advised.

Descriptions: Eligibility for entry to a Master of Science or Doctor of Philosophy program.

This unit of study is part of a research degree program. Information on research topics for the Faculty of Health, Engineering and Science may be found on the faculty website at the following link: http://www.vu.edu.au/Faculties/HealthEngineeringandScience/ResearchandResearchTraining/MajorResearchAreas/

Assessment criteria and Core Research Graduate Attributes can be found on the Office for Postgraduate Research website at the following link: http://www.vu.edu.au/Research/OfficeforPostgraduateResearch/PolicyProcessesandGuidelines/

Credit Points: 48

Learning Outcomes: To be advised.

Class Contact: To be advised.

Required Reading: To be advised.

Assessment: To be advised.

VQT8002 RESEARCH THESIS 2 FULL TIME

Locations: To be advised.

Pre-requisites: To be advised.

Descriptions: Eligibility for entry to a Master of Science or Doctor of Philosophy program.

This unit of study is part of a research degree program. Information on research topics for the Faculty of Health, Engineering and Science may be found on the faculty website at the following link: http://www.vu.edu.au/Faculties/HealthEngineeringandScience/ResearchandResearchTraining/MajorResearchAreas/

Assessment criteria and Core Research Graduate Attributes can be found on the Office for Postgraduate Research website at the following link: http://www.vu.edu.au/Research/OfficeforPostgraduateResearch/PolicyProcessesandGuidelines/

Credit Points: 48

Learning Outcomes: To be advised.

Class Contact: To be advised.

Required Reading: To be advised.

Assessment: To be advised.

VQT8011 RESEARCH THESIS 1 PART TIME

Locations: To be advised.

Pre-requisites: To be advised.

Descriptions: Eligibility for entry to a Master of Science or Doctor of Philosophy program.

This unit of study is part of a research degree program. Information on research topics for the Faculty of Health, Engineering and Science may be found on the faculty website at the following link: http://www.vu.edu.au/Faculties/HealthEngineeringandScience/ResearchandResearchTraining/MajorResearchAreas/

Assessment criteria and Core Research Graduate Attributes can be found on the Office for Postgraduate Research website at the following link: http://www.vu.edu.au/Research/OfficeforPostgraduateResearch/PolicyProcessesandGuidelines/

Credit Points: 24

Learning Outcomes: To be advised.

Class Contact: To be advised.

Required Reading: To be advised.

Assessment: To be advised.

VQT8012 RESEARCH THESIS 2 PART TIME

Locations: To be advised.

Pre-requisites: To be advised.

Descriptions: Eligibility for entry to a Master of Science or Doctor of Philosophy program.

This unit of study is part of a research degree program. Information on research topics for the Faculty of Health, Engineering and Science may be found on the faculty website at the following link: http://www.vu.edu.au/Faculties/HealthEngineeringandScience/ResearchandResearchTraining/MajorResearchAreas/

Assessment criteria and Core Research Graduate Attributes can be found on the Office for Postgraduate Research website at the following link: http://www.vu.edu.au/Research/OfficeforPostgraduateResearch/PolicyProcessesandGuidelines/

Credit Points: 24

Learning Outcomes: To be advised.

Class Contact: To be advised.

Required Reading: To be advised.

Assessment: To be advised.
OFFICE OF HEALTH, ENGINEERING AND SCIENCE

Below are details of courses offered by the Office of Health, Engineering and Science in 2010. This information is also available online on the University’s searchable courses database at www.vu.edu.au/courses

NOTE: Courses available to International students are marked with the (I) symbol.

BACHELOR OF ENGINEERING/BACHELOR OF LAWS

Course Code: EBBL

Campus: Footscray Park

Course Objectives: (For continuing students only)

The course will provide students with a broad ranging program of study and learning aimed at satisfying the academic and professional requirements in both law and the appropriate field of engineering. The course will equip graduates to obtain employment in law, business and government, in major engineering organisations, at the Bar and elsewhere. It will improve learning by providing a fundamental framework for the application of legal and engineering concepts and ideas and their co-integration, which will ensure the students, are capable of engaging successfully in these professional areas in a commercial environment.

The course will provide students with a broad ranging program of study and learning aimed at satisfying the academic and professional requirements in both law and the appropriate field of engineering. The course will equip graduates to obtain employment in law, business and government, in major engineering organisations, at the Bar and elsewhere. It will improve learning by providing a fundamental framework for the application of legal and engineering concepts and ideas and their co-integration, which will ensure the students, are capable of engaging successfully in these professional areas in a commercial environment.

Course Duration: To be advised.

Admission Requirements: Course Duration The course is offered over six years on a full-time basis, or part-time equivalent. Each student must obtain 576 credit points through academic study to graduate. Subject to Grade Point Average (GPA), students undertaking the Bachelor of Laws and Bachelor of Laws combined degrees may receive their award with honours. In calculating a specified grade of honours, the following points shall be attributed to Bachelor of Laws units: - Pass = 5 points; Credit = 6 points; Distinction = 7 points; High Distinction = 8 points. In calculating the GPA, those Bachelor of Laws units successfully completed by the student will be ranked in order commencing with 8 point units and ending with 5 point units (if applicable). The aggregate of points attributed to the first two thirds of units so listed shall then be calculated and a grade point average determined (aggregated so calculated by the number of units being the first two thirds of units in the list). Bachelor of Laws with 2B Honours - GPA of 7 or more and a Credit grade in the unit of study Advanced Legal Research Dissertation; Bachelor of Laws with 2A Honours - GPA of 7 or more and a Distinction grade in the unit of study Advanced Legal Research Dissertation; Bachelor of Laws with 1st Class Honours - GPA of 7.5 or more and a Distinction or better grade in the unit of study Advanced Legal Research Dissertation. ADMISSION REQUIREMENTS To qualify for admission to the course an applicant must have successfully completed a course of study at year 12 level or equivalent. In addition to satisfying the entry requirements for Australian resident students or demonstrating equivalence, overseas students must provide evidence of proficiency in the English language: International English Language Testing System - overall score of 6 and no individual band score less than 6.0. Other Course Specific Notes Engineering Component: 288 credit points taken from an engineering specialization, with at least 48 Credit points in units of study normally taken in the 3rd year of a BEng degree and at least 48 credit points in units of study normally taken in the 4th year of a BSc degree. Students will generally take a selection of the units of study from one of the BEng courses offered by the Faculty of Health, Engineering and Science as advised by the course coordinator.

Course Structure: The course is offered over six years on a full-time basis, or part-time equivalent. Each student must obtain 576 credit points through academic study to graduate. Subject to Grade Point Average (GPA), students undertaking the Bachelor of Laws and Bachelor of Laws combined degrees may receive their award with honours. In calculating a specified grade of honours, the following points shall be attributed to Bachelor of Laws units: - Pass = 5 points; Credit = 6 points; Distinction = 7 points; High Distinction = 8 points. In calculating the GPA, those Bachelor of Laws units successfully completed by the student will be ranked in order commencing with 8 point units and ending with 5 point units (if applicable). The aggregate of points attributed to the first two thirds of units so listed shall then be calculated and a grade point average determined (aggregated so calculated by the number of units being the first two thirds of units in the list). Bachelor of Laws with 2B Honours - GPA of 7 or more and a Credit grade in the unit of study Advanced Legal Research Dissertation; Bachelor of Laws with 2A Honours - GPA of 7 or more and a Distinction grade in the unit of study Advanced Legal Research Dissertation; Bachelor of Laws with 1st Class Honours - GPA of 7.5 or more and a Distinction or better grade in the unit of study Advanced Legal Research Dissertation. ADMISSION REQUIREMENTS To qualify for admission to the course an applicant must have successfully completed a course of study at year 12 level or equivalent. In addition to satisfying the entry requirements for Australian resident students or demonstrating equivalence, overseas students must provide evidence of proficiency in the English language: International English Language Testing System - overall score of 6 and no individual band score less than 6.0. Other Course Specific Notes Engineering Component: 288 credit points taken from an engineering specialization, with at least 48 Credit points in units of study normally taken in the 3rd year of a BEng degree and at least 48 credit points in units of study normally taken in the 4th year of a BSc degree. Students will generally take a selection of the units of study from one of the BEng courses offered by the Faculty of Health, Engineering and Science as advised by the course coordinator.

- Compulsory Law Units of Study

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<td>CONTRACTS 2</td>
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<td>BLB2119</td>
<td>CORPORATIONS LAW 1</td>
<td>12</td>
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<td>BLB2124</td>
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<td>CRIMINAL LAW</td>
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<td>DISPUTE RESOLUTION AND CIVIL PROCEDURE</td>
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<td>BLB4136</td>
<td>EQUITY AND TRUSTS</td>
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<td>BLB4139</td>
<td>EVIDENCE</td>
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<td>BLB3130</td>
<td>INTERVIEWING AND NEGOTIATION SKILLS</td>
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<td>BLB3131</td>
<td>LAWYERS AND LEGAL ETHICS</td>
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Law Electives - Select four of the following:

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<td>BLB3136</td>
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FACULTY OF HEALTH, ENGINEERING AND SCIENCE

BLB3129 INTELLECTUAL PROPERTY LAW
BLB4141 INTERNATIONAL TRADE LAW
BLB4140 PRIVACY AND MEDIA LAW
BBB3200 PROFESSIONAL LEGAL PRACTICE
BLB4143 PUBLIC INTERNATIONAL LAW
BLB3132 SECURITIES LAW
BLB3134 TAXATION LAW
BLB1125 Torts 2
BLB2123 TRADE PRACTICES LAW AND POLICY
BLB4146 WILLS AND THE ADMINISTRATION OF ESTATES
BLB4142 ADVANCED LEGAL RESEARCH DISSERTATION
BLB4137 ASIAN LEGAL SYSTEMS
BLB4146 BUSINESS LAw
BLB1123 INTERNATIONAL TRADE PRACTICES
BLB3134 TAXATION LAW
BLB3132 SECURITIES LAW
BLB4143 PUBLIC INTERNATIONAL LAW
BLB2123 TRADE PRACTICES LAW AND POLICY
BLB4146 WILLS AND THE ADMINISTRATION OF ESTATES
BLB4142 ADVANCED LEGAL RESEARCH DISSERTATION
BLB4137 ASIAN LEGAL SYSTEMS
BLB4146 BUSINESS LAw
BLB1123 INTERNATIONAL TRADE PRACTICES

FACULTY OF HEALTH, ENGINEERING AND SCIENCE

BLB3129 INTELLECTUAL PROPERTY LAW
BLB4141 INTERNATIONAL TRADE LAW
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BLB3132 SECURITIES LAW
BLB4143 PUBLIC INTERNATIONAL LAW
BLB2123 TRADE PRACTICES LAW AND POLICY
BLB4146 WILLS AND THE ADMINISTRATION OF ESTATES
BLB4142 ADVANCED LEGAL RESEARCH DISSERTATION
BLB4137 ASIAN LEGAL SYSTEMS
BLB4146 BUSINESS LAw
BLB1123 INTERNATIONAL TRADE PRACTICES

BACHELOR OF ENGINEERING/BACHELOR OF ARTS
Course Code: EBEB

Campus: Footscray Park

Course Objectives: (For continuing students only)
The double degree structure of the Bachelor of Engineering/ Bachelor of Arts integrates education, training and research. With the increasing globalisation of industry, Australia’s close proximity to Asia and the increasing reliance on technology and in particular multimedia, there is need for professionally qualified engineers to be offered the opportunity to be exposed to international studies and develop more skills in the field of multimedia communications. The course will give students access to a broad curriculum and to a program, which transcends disciplinary boundaries. The combined Bachelor of Engineering/Bachelor of Arts course will prepare professionally trained engineers to have a broader outlook than just the purely technical skills of the engineering program; enhance their professional engineering skills with LOTE and cultural studies; and produce graduates capable of performing their professional functions in culturally diverse settings.

The combined Bachelor of Engineering/Bachelor of Arts course will prepare professionally trained engineers to have a broader outlook than just the purely technical skills of the engineering program; enhance their professional engineering skills with LOTE and cultural studies; and produce graduates capable of performing their professional functions in culturally diverse settings. The double degree structure of the Bachelor of Engineering/ Bachelor of Arts integrates education, training and research. With the increasing globalisation of industry, Australia’s close proximity to Asia and the increasing reliance on technology and in particular multimedia, there is need for professionally qualified engineers to be offered the opportunity to be exposed to international studies and develop more skills in the field of multimedia communications. The course will give students access to a broad curriculum and to a program, which transcends disciplinary boundaries.

Course Structure: The course is offered over 5 years on a full-time basis or part-time equivalent. Each student must obtain 480 credit points through academic study to graduate

Business Component
Core Business Units of Study
- BA01101 ACCOUNTING FOR DECISION MAKING
- BCO1102 INFORMATION SYSTEMS FOR BUSINESS
- BEO1105 ECONOMIC PRINCIPLES
- BEO1106 BUSINESS STATISTICS
- BHO1171 INTRODUCTION TO MARKETING
- BLO1105 BUSINESS LAW
- BM01102 MANAGEMENT AND ORGANISATION BEHAVIOUR

Professional Development Business Units of Study
- BFP1001 PROFESSIONAL DEVELOPMENT 1
- BFP2001 PROFESSIONAL DEVELOPMENT 2

Specialisation Elective Units of Study
- 7 (12 credit point) specialisation units of study taken from Bachelor of Business courses offered by the University and approval by the Course Co-ordinator.

BACHELOR OF ENGINEERING/BACHELOR OF BUSINESS
Course Code: EBEB

Campus: Footscray Park

Course Objectives: (For continuing students only)
The combined course will provide students with a broad ranging program of study and learning aimed at satisfying the academic and professional requirements in a specialisation in business together with an appropriate field of engineering. The double degree course will equip graduates to obtain employment in business, government, and in major engineering organisations.

The combined course will provide students with a broad ranging program of study and learning aimed at satisfying the academic and professional requirements in a specialisation in business together with an appropriate field of engineering. The double degree course will equip graduates to obtain employment in business, government, and in major engineering organisations.

Course Duration: To be advised.
Admission Requirements: The will be no new admissions to this course. Other Course Specific Notes Engineering Component: 288 credit points taken from an engineering specialisation, with at least 48 credit points in units of study normally taken in the 3rd year of a BEng degree and at least 48 credit points in units of study normally taken in the 4th year of a BEng degree. Students will generally take a selection of the units of study from one of the BEng courses offered by the Faculty of Health, Engineering and Science as advised by the course co-ordinator.

Business Component Core Business Units of Study: [TSL1][SL1][BAO1101][/SL1][/TSL1][/SL1][BCO1102][/SL1][/TSL1][/SL1][BCO1105][/SL1][/TSL1][/SL1][BE01106][/SL1][/TSL1][/SL1][BH01171][/SL1][/TSL1][/SL1][BL01102][/SL1][/TSL1][/TSL1][Professional Development Business Units of Study: [TSL1][SL1][BFP1001][/SL1][/TSL1][TSL1][BFP2001][/SL1][/TSL1]

Specialisation Elective units of study: 7 (12 credit point) specialisation units of study taken from Bachelor of Business courses offered by the University and approved by the Course Co-ordinator.

Course Structure: The course is offered over five years on a full-time basis or part-time equivalent. Each student must obtain 480 credit points through academic study to graduate.

BACHELOR OF ENGINEERING/BACHELOR OF BUSINESS (E-COMMERCE)
Course Code: EBEO
Campus: Footscray Park
Course Objectives: (For continuing students only)
The combined course will provide students with a broad ranging program of study and learning aimed at satisfying the academic and professional requirements in a specialisation in business together with an appropriate field of engineering. The double degree course will equip graduates to obtain employment in business, government, and in major engineering organisations.

The combined course will provide students with a broad ranging program of study and learning aimed at satisfying the academic and professional requirements in a specialisation in business together with an appropriate field of engineering. The double degree course will equip graduates to obtain employment in business, government, and in major engineering organisations.

Career Opportunities: Private and public sector organisations, including scientific.
Course Duration: To be advised.

Admission Requirements: To qualify for admission to the course an applicant must have successfully completed a course of study at year 12 level or equivalent.

In addition to satisfying the entry requirements for Australian resident students or demonstrating equivalence, overseas students must provide evidence of proficiency in the English language:
- International English Language Testing System - overall band score of 6-7 subject to individual profile, or
- Test of English as a Foreign Language - score of 550, plus a Test of Written English - score of 5.

Course Structure: The course is offered over five years on a full-time basis or part-time equivalent. Each student must obtain 480 credit points through academic study to graduate.

Engineering Component
288 credit points taken from an engineering specialisation, with at least 48 credit points in units of study normally taken in the 3rd year of a BEng degree and at least 48 credit points in units of study normally taken in the 4th year of a BEng degree. Students will generally take a selection of the units of study from one of the BEng courses offered by the Faculty of Health, Engineering and Science as advised by the course co-ordinator.

Core Business Units of Study

BA01101 ACCOUNTING FOR DECISION MAKING 12
BC01102 INFORMATION SYSTEMS FOR BUSINESS 12
BE01105 ECONOMIC PRINCIPLES 12
BE01106 BUSINESS STATISTICS 12
BH01171 INTRODUCTION TO MARKETING 12
BL01105 BUSINESS LAW 12
BM01102 MANAGEMENT AND ORGANISATION BEHAVIOUR 12
BC01147 INTRODUCTION TO PROGRAMMING CONCEPTS 12
BC02149 DATABASE SYSTEMS 12
BC02500 ELECTRONIC COMMERCE TECHNOLOGIES 12
BC02501 ELECTRONIC COMMERCE BUSINESS INTERFACES 12
BC02502 DEVELOPING ELECTRONIC COMMERCE SYSTEMS 12
BC03443 THE INFORMATION PROFESSIONAL 12
BC03810 SYSTEMS IMPLEMENTATION 12
Professional Development Business Units of Study
BFP1001 PROFESSIONAL DEVELOPMENT 1 12
BFP2001 PROFESSIONAL DEVELOPMENT 2 12

BACHELOR OF ENGINEERING/BACHELOR OF SCIENCE
Course Code: EBSE
Campus: Footscray Park
Course Objectives: (For continuing students only)
The combined Bachelor of Engineering/Bachelor of Science course will provide students with a broad ranging program of study and learning aimed at satisfying the academic and professional requirements in both science and the appropriate field of engineering. The double degree course will enable graduates to obtain employment in business and government, in major engineering organisations, private industry and elsewhere.

The combined Bachelor of Engineering/Bachelor of Science course will provide students with a broad ranging program of study and learning aimed at satisfying the academic and professional requirements in both science and the appropriate field of engineering. The double degree course will enable graduates to obtain employment in business and government, in major engineering organisations, private industry and elsewhere.

Course Duration: To be advised.

Admission Requirements: The prerequisite subjects for admission into the first year of the course are based on entry at post Year 12, Victorian Certificate of Education, or equivalent level, and are: Units 3 and 4 a study score of at least 25 in English (any) and in mathematical methods (either) or specialist mathematics.

Persons transferring from other courses or having overseas or other entrance qualifications of at least equivalent standard to those listed above, should apply for admission in the normal manner. A preliminary interview with the Head of School concerned is advisable for such applicants.

Full-Fee paying international students must have qualifications which are equivalent to those listed above. In addition, they must provide evidence of proficiency in the English language:
- IELTS - an overall band score of 6+, subject to individual profile, or
- TOEFL - a score of 550+, and a Test of Written English (TWE) score of 5+.
FACULTY OF HEALTH, ENGINEERING AND SCIENCE

Course Structure: Five years of full-time study. Each student must obtain 480 credit points through academic study to graduate.

Admission requirements:

- Satisfactory completion of the program will enable a student to enter directly into the masters course for which the qualifying program has been designed.

- Does not lead to a formal qualification of the faculty;
- Is suitable for a wide range of students with varying entry qualifications;
- Is designed to prepare students for the full range of masters degrees by coursework available in the faculty;
- Has flexible entry points;
- Will be individually designed for each student;
- Can have varying lengths;
- Satisfactory completion of the program will enable a student to enter directly into the masters course for which the qualifying program has been designed.

Course Objectives:
The aim of the course is to provide students with a basic grounding in the principles and practice relevant to business in today’s corporate world. It is anticipated that students will transfer into a prescribed business degree program thus deepening knowledge in particular areas and developing a specialist skill base.

Course Duration: To be advised.

Admission Requirements: A wide range of selection criteria will be applied to this program to cater for the range of prior qualifications and experiences.

For international students a minimum IELTS score of 6.5 is required for entry into the program.

In exceptional cases a student may be considered for admission with an IELTS score of 6.0. In these cases the program advisor will take special care to ensure that the student is meeting the English language demands of the program and, if necessary, arrange for special assistance from appropriate sources within the university.

Course Structure: As indicated above, the Masters Qualifying Program is individually structured for each student undertaking the program. Upon acceptance into the program each student will be assigned a program advisor who will, with the student, work out in which areas the student requires further study and develop a program to meet those needs. This will generally comprise a selection of undergraduate and/or postgraduate subjects in the general area of their preferred Masters degree but may also include English language and research method instruction.

The length of the program will vary from student to student and may take one, two or three semesters depending on the “gap” between the student’s prior experiences and qualifications and the masters course they are seeking to enter.

MASTER’S QUALIFYING PROGRAM

Course Code: ENMQ

Campus: Werribee, City Flinders, Sunbury

Course Objectives: The Faculty of Health, Engineering and Science Masters Qualifying Program is designed to facilitate entry to coursework masters degrees for a wide range of students who lack the formal qualifications or experience for direct entry into the master by coursework degree of their choice. Note that the program:

- Does not lead to a formal qualification of the faculty;
- Is suitable for a wide range of students with varying entry qualifications;
- Is designed to prepare students for the full range of masters degrees by coursework available in the faculty;
- Has flexible entry points;
- Will be individually designed for each student;
- Can have varying lengths;
- Satisfactory completion of the program will enable a student to enter directly into the masters course for which the qualifying program has been designed.

The aim of the course is to provide students with a basic grounding in the principles and practice relevant to business in today’s corporate world. It is anticipated that students will transfer into a prescribed business degree program thus deepening knowledge in particular areas and developing a specialist skill base.

Course Duration: To be advised.

Admission Requirements: A wide range of selection criteria will be applied to this program to cater for the range of prior qualifications and experiences.

For international students a minimum IELTS score of 6.5 is required for entry into the program.

In exceptional cases a student may be considered for admission with an IELTS score of 6.0. In these cases the program advisor will take special care to ensure that the student is meeting the English language demands of the program and, if necessary, arrange for special assistance from appropriate sources within the university.

Course Structure: As indicated above, the Masters Qualifying Program is individually structured for each student undertaking the program. Upon acceptance into the program each student will be assigned a program advisor who will, with the student, work out in which areas the student requires further study and develop a program to meet those needs. This will generally comprise a selection of undergraduate and/or postgraduate subjects in the general area of their preferred Masters degree but may also include English language and research method instruction.

The length of the program will vary from student to student and may take one, two or three semesters depending on the “gap” between the student’s prior experiences and qualifications and the masters course they are seeking to enter.

MASTER OF ENGINEERING (BY RESEARCH)

Course Code: ERT, EROT

Campus: Werribee, City Flinders, Sunbury

Course Objectives: The aim of the course is to provide students with a basic grounding in the principles and practice relevant to business in today’s corporate world. It is anticipated that students will transfer into a prescribed business degree program thus deepening knowledge in particular areas and developing a specialist skill base.

Course Duration: To be advised.

Admission Requirements: To qualify for admission to the course, an applicant must have successfully completed a course of study at year 12 or equivalent. Year 12 Prerequisites: Units 3 and 4 - study score of at least 20 in English (any). Selection Mode: Current Year 12 applicants: Equivalent National Tertiary Entrance Rank (ENTER) and two-stage process with a middle-band of approximately 20%. Non-current year 12 applicants: ENTER and/or academic record. Middle-band consideration is given to performance in the full range of VCE studies undertaken. Applicants who have not completed Year 12 but who possess appropriate educational qualifications, work or life experiences which would enable them to successfully undertake the course, will be considered for admission. In addition to satisfying the entry requirements for Australian resident students or demonstrating equivalence, overseas students must provide evidence of proficiency in the English language: International English Language Testing System - overall score of 6 and no individual band score less than 6.0.

Course Structure: Year 1, Semester 1

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Year 1, Semesters 1 & 2, Part Time

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Year 2
DOCTOR OF PHILOSOPHY

Course Code: HPIN

Campus: Werribee, City Flinders, Sunbury, Various, dependent on the research field.

Course Objectives: The Doctor of Philosophy (PhD) is normally undertaken purely by research on a topic that is agreed between the student and supervisor and is endorsed through university processes. Students may include some coursework studies during their candidature as recommended by the university. Academic staff, with suitable qualifications and proven research skills, supervise students in various research fields across health, engineering and science.

The Doctor of Philosophy (PhD) is normally undertaken purely by research on a topic that is agreed between the student and supervisor and is endorsed through university processes. Students may include some coursework studies during their candidature as recommended by the university. Academic staff, with suitable qualifications and proven research skills, supervise students in various research fields across health, engineering and science.

Course Duration: To be advised.

Admission Requirements: Applicants should normally have completed either a Masters degree or a four year undergraduate degree with Honours or its equivalent at a high standard.

Course Structure: The course normally requires four years of full-time study or part-time equivalent.

School of Architectural, Civil and Mechanical Engineering

Civil and Building Stream

VCC8001 RESEARCH THESIS FULL TIME 24
VCC8002 RESEARCH THESIS FULL TIME 48
VCC8011 RESEARCH THESIS (PART-TIME) 24
VCC8012 RESEARCH THESIS (PART-TIME) 24

Mechanical Stream

VMR8001 RESEARCH THESIS 1 FULL TIME 48
VMR8002 RESEARCH THESIS 2 FULL TIME 48
VMR8011 RESEARCH THESIS 1 PART TIME 24
VMR8012 RESEARCH THESIS 2 PART TIME 24

Australian Food Marketing Centre

REM8001 RESEARCH THESIS 1 FULL TIME 48
REM8002 RESEARCH THESIS 2 FULL TIME 48
REM8011 RESEARCH THESIS 1 PART TIME 24
REM8012 RESEARCH THESIS 2 PART TIME 24

School of Biomedical and Clinical Sciences

Biomedical Sciences Stream

RBM8001 RESEARCH THESIS 1 FULL TIME 48
RBM8002 RESEARCH THESIS 2 FULL TIME 48
RBM8011 RESEARCH THESIS 1 PART TIME 24
RBM8012 RESEARCH THESIS 2 PART TIME 24

Health Sciences Stream

HHM6800 RESEARCH THESIS (FULL-TIME) 48
HHM6801 RESEARCH THESIS (PART-TIME) 24

School of Computer Science and Mathematics

RCM8001 RESEARCH THESIS 1 FULL TIME 48
RCM8002 RESEARCH THESIS 2 FULL TIME 48
RCM8011 RESEARCH THESIS 1 PART TIME 24
RCM8012 RESEARCH THESIS 2 PART TIME 24

Centre for Environmental Safety and Risk engineering

VQT8001 RESEARCH THESIS 1 FULL TIME 48
VQT8002 RESEARCH THESIS 2 FULL TIME 48
VQT8011 RESEARCH THESIS 1 PART TIME 24
VQT8012 RESEARCH THESIS 2 PART TIME 24

School of Electrical Engineering

Electrical Engineering Stream

VEE8001 RESEARCH THESIS 1 FULL TIME 48
VEE8002 RESEARCH THESIS 2 FULL TIME 48
VEE8011 RESEARCH THESIS 1 PART TIME 24
VEE8012 RESEARCH THESIS 2 PART TIME 24

Physics Stream

RPH8001 RESEARCH THESIS 1 FULL TIME 48
RPH8002 RESEARCH THESIS 2 FULL TIME 48
RPH8011 RESEARCH THESIS 1 PART TIME 24
RPH8012 RESEARCH THESIS 2 PART TIME 24

School of Molecular Sciences

RBT8001 RESEARCH THESIS 1 FULL TIME 48
RBT8002 RESEARCH THESIS - SEM 2 (FULL-TIME) 48
RBT8011 RESEARCH THESIS 1 PART TIME 24
RBT8012 RESEARCH THESIS - SEM 2 (PART-TIME) 24

Food Science Stream

RBF8001 RESEARCH THESIS 1 FULL TIME 48
RBF8002 RESEARCH THESIS 2 FULL TIME 48
RBF8011 RESEARCH THESIS 1 PART TIME 24
RBF8012 RESEARCH THESIS 2 PART TIME 24

Chemical Sciences Stream

RCS8001 RESEARCH THESIS 1 FULL TIME 48
RCS8002 RESEARCH THESIS 2 FULL TIME 48
Course Code: JCFY

Course Objectives: This program aims to provide an opportunity for students: who have not studied science and mathematics at Year 12 level; or who have studied basic science and mathematics at Year 12 level but did not achieve entrance requirements for courses in the Faculty of Health, Engineering and Science; whose recent educational results have not been at the level of which they are capable; who are returning to study after some years away from formal education; or who wish to change direction in their education.

In general, the Foundation Studies program aims to provide an opportunity for students: (i) who have not studied science and mathematics at Year 12 level; (ii) who have studied basic science and mathematics at Year 12 level but did not achieve appropriate study scores to enable them to satisfy the entrance requirements for courses in the Faculty of Science, Engineering and Technology; (iii) whose recent educational results have not been at the level of which they are capable of performing; (iv) who are returning to study after some years away from formal education; or (v) who wish to change direction in their education. To make certain that students receive a concerted education that will fulfill the entry requirements of the tertiary system whilst taking into consideration the educational background of the students, the majority of the foundation study areas are streamlined. Different streams can be undertaken for different subjects if required. These streams; beginners, intermediate and advanced; offered by the Foundation Studies program reflect and accommodate the broad cross-section of the educational backgrounds of students. Studies Streams Beginners Stream The beginners stream is designed for students that would like to pursue a tertiary qualification in a science, computing or an engineering discipline but have not been successful in completing or meeting the pass requirements of related subject areas previously undertaken. The intermediate level will run over two semesters, each of which will run for 16 weeks and will commence in March and conclude in December of the same year. Advanced Stream Students enrolled into the advanced stream of a particular subject will undertake an accelerated program. If all the topic areas within the study area (s) over Semester One are successfully completed a student may be eligible to enter a first-year undergraduate course or first-year year undergraduate core subjects within the Faculty in Semester Two. Choice of Stream Suitability of entry into any of these streams will be assessed upon completion of an entrance test and an interview. Students that have not previously attempted study areas that parallel those they wish to undertake at foundation level may opt not to sit for the test and enter the beginners stream. Each stream will be timetabled so as to allow students upon consultation with Foundation Studies staff to move into an alternate stream over the duration of the course. Study Areas Choices The following study areas are offered as part of Foundation Studies: Biology, Chemistry, English Language and Communication Skills, IT, Mathematics for Scientists, Mathematics for Engineers and Physics. Students will generally enrol in four subject areas. Fewer subjects may be undertaken. This will be determined by considering the students previous academic record, the results of the grading tests and via interview with the student. A choice of either a mathematics for scientists or engineers typically must be undertaken by all students.

Course Duration: To be advised.

Admission Requirements: To qualify for admission to the course, an applicant must have successfully completed a course of study at year 12 or equivalent*. Year 12 Prerequisites: Units 3 and 4 - study score of at least 20 in English (any). Selection Mode: Current Year 12 applicants: Equivalent National Tertiary Entrance Rank (ENTER) and two-stage process with a middle-band of approximately 20%. Non-current year 12 applicants: ENTER and/or academic record**. Middle-band: consideration is given to performance in the full range of VCE studies undertaken.* Applicants who have not completed Year 12 but who possess appropriate educational qualifications, work or life experiences which would enable them to successfully undertake the course, will be considered for admission. In addition to satisfying the entry requirements for Australian resident students or demonstrating equivalence, overseas students must provide evidence of proficiency in the English language: International English Language Testing System - overall score of 6 and no individual band score less than 6.0.

Course Structure: The course is year-long course although transfer to other courses is possible as a subject transfer following semester one. Semester One is undertaken over 17 weeks and Semester Two over 16 weeks. Beginners students may require to undertake a further session in early February of the following year for approximately seven weeks. Course Location All study areas will be taught at the University's Footscray Park campus. Course Fee Students who fit under the Federal Government Guidelines of disadvantage are HECS exempt with respect to the Foundation Studies program. Application Procedures Application to Foundation Studies is via direct application. Students will need to fill out an undergraduate application form available from the Faculty Office. Further information regarding the Foundation Studies program can be obtained from the Faculty Office.

BACHELOR OF SCIENCE (SPECIALISATION)
Course Code: SBGG

Course Objectives: (For continuing students only)
Graduates from this course should be able to: * locate, manage and use scientific information efficiently and effectively; * solve scientific problems effectively in a range of settings including industry and community; * exhibit high levels of numeracy skills in a range of scientific settings; * communicate effectively in spoken and written forms on a range of scientific and mathematical topics to professional and community groups; * apply an evidence-based research approach to a chosen area of science; * respond with social and cultural awareness within local and global
environments; * work autonomously and collaboratively as a professional in both industry and community settings.

Graduates from this course should be able to: * locate, manage and use scientific information efficiently and effectively; * solve scientific problems effectively in a range of settings including industry and community; * exhibit high levels of numeracy skills in a range of scientific settings; * communicate effectively in spoken and written forms on a range of scientific and mathematical topics to professional and community groups; * apply an evidence-based research approach to a chosen area of science; * respond with social and cultural awareness within local and global environments; * work autonomously and collaboratively as a professional in both industry and community settings.

Course Duration: 3 years

Admission Requirements: To qualify for admission to the course, applicants must have: Science -Specialisation pre-requisites: Units 3 and 4, a study score of at least 25 in English (any) and in mathematics (any). Middle band: Completing biology, chemistry, food and technology, physics or specialist mathematics = an aggregate 3 points higher per study, to a maximum of 9 points. Education -Science Education pre-requisites: Units 3 and 4, a study score of at least 25 in English (any) and in mathematics (any).

Alternative entry Applicants who do not meet the normal admission requirements but who possess appropriate educational qualifications, work or life experiences that would enable them to successfully undertake the course, will be considered for admission.

Persons of Aboriginal or Torres Strait Islander descent are encouraged to apply for admission. Applicants will be assessed on an individual basis to determine their suitability and potential for success in the course.

Applicants over the age of 21 years on the 1st January for the commencing academic year are eligible to apply for consideration under Mature Age entry.

Applicants who consider that their capacity to qualify under normal entry provisions has been limited through disadvantage, for example, illness, disability, financial hardship or isolation, are eligible to apply for consideration as a disadvantaged person. Applicants will be assessed on an individual basis to determine their suitability and potential for success in the course.

Students who successfully complete the VU alternative entry or foundations studies courses will be offered access into the SBGG degree.

Course Structure:

Biotechnology

Year 1, Semester 1
RBF1150 GLOBAL ENVIRONMENTAL ISSUES 12
RBF1310 BIOLOGY 1 12
RCM1711 MATHEMATICAL FOUNDATIONS 1 12
RCS1601 CHEMISTRY 1A 12

Year 1, Semester 2
RBF1320 BIOLOGY 2 12
RCM1613 APPLIED STATISTICS 1 12
RCS1602 CHEMISTRY 1B 12

Plus one elective

Chemistry

Year 1, Semester 1
RBF1150 GLOBAL ENVIRONMENTAL ISSUES 12
RBF1310 BIOLOGY 1 12
RCM1711 MATHEMATICAL FOUNDATIONS 1 12
RCS1601 CHEMISTRY 1A 12

Chemistry

Year 1, Semester 2
RBF1320 BIOLOGY 2 12
RCM1613 APPLIED STATISTICS 1 12
RCS1602 CHEMISTRY 1B 12

Plus one elective

Ecology & Environmental Management

Year 1, Semester 1
RBF1150 GLOBAL ENVIRONMENTAL ISSUES 12
RBF1310 BIOLOGY 1 12
RCM1711 MATHEMATICAL FOUNDATIONS 1 12
RCS1601 CHEMISTRY 1A 12

Year 1, Semester 2
RBF1320 BIOLOGY 2 12
RCM1613 APPLIED STATISTICS 1 12
RCS1602 CHEMISTRY 1B 12

Plus one elective

Food Science

Year 1, Semester 1
RBF1150 GLOBAL ENVIRONMENTAL ISSUES 12
RBF1310 BIOLOGY 1 12
RCM1711 MATHEMATICAL FOUNDATIONS 1 12
RCS1601 CHEMISTRY 1A 12

Year 1, Semester 2
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### FACULTY OF HEALTH, ENGINEERING AND SCIENCE

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16
BACHELOR OF SCIENCE/BACHELOR OF PSYCHOLOGY
Course Code: SBSP

Campus: Werribee, City Flinders, Sunbury

Course Objectives: This degree enables students to study a range of science programs, such as: behavioural studies, counselling, physiology and pharmacology, linked with major studies in psychology.

The overall objective of the combined Bachelor of Science/Bachelor of Psychology is to provide graduates with an excellent knowledge of human physiological and psychological function together with highly developed skills in critical analysis, social research methods and communication. The psychology units in this degree comprise an approved sequence for registration with the Australian Psychological Society for entry into a fourth year program. Students will be equipped to enter careers in counselling, health promotion, laboratory science or as crime scene officers. With further study, students will be equipped for employment as clinical psychologists or medical research scientists.

Course Duration: To be advised.

Admission Requirements: To qualify for admission to the course, an applicant must have successfully completed a course of study at year 12 or equivalent*. Year 12 Prerequisites: Units 3 and 4 - study score of at least 20 in English (any).

Selection Mode: Current Year 12 applicants: Equivalent National Tertiary Entrance Rank (ENTER) and two-stage process with a middle-band of approximately 20%. Non-current year 12 applicants: ENTER and/or academic record*.

Middle-band: consideration is given to performance in the full range of VCE studies undertaken.* Applicants who have not completed Year 12 but who possess appropriate educational qualifications, work or life experiences which would enable them to successfully undertake the course, will be considered for admission.In addition to satisfying the entry requirements for Australian resident students or demonstrating equivalence, overseas students must provide evidence of proficiency in the English language: International English Language Testing System - overall score of 6 and no individual band score less than 6.0.

Course Structure: The course is offered over four years on a full-time basis or part-time equivalent.

Course structure for Psychology/Biomedical Sciences

Year 1

Semester 1
RBM1518 HUMAN PHYSIOLOGY 1 12
RBM1100 FUNCTIONAL ANATOMY OF THE TRUNK 12
APP1012 PSYCHOLOGY 1A 12

Semester 2
RBM1528 HUMAN PHYSIOLOGY 2 12
RBM2200 FUNCTIONAL ANATOMY OF THE HEAD AND BACK 12
APP1013 PSYCHOLOGY 1B 12
OR Arts Elective equal to 12 credit points

Year 2

Semester 1
RBM2530 PATHOPHYSIOLOGY 1 12
RCS1110 CHEMISTRY FOR BIOLOGICAL SCIENCES A 12
APP2013 PSYCHOLOGY 2A 12
APP2031 DEVELOPMENT ISSUES IN PSYCHOLOGY 12

Semester 2
RBM2540 PATHOPHYSIOLOGY 2 12
RCS1120 CHEMISTRY FOR BIOLOGICAL SCIENCES B 12

Year 3

Semester 1
RBM2560 MEDICAL BIOCHEMISTRY 12
APP2014 PSYCHOLOGY 2B 12
APS2040 QUANTITATIVE SOCIAL RESEARCH METHODS 1 12
*Alternative Biomedical Sciences units below may be substituted for Chemistry for Biological Sciences A and B subject to the approval of the course co-ordinator

Year 4

Semester 1
APS2030 QUALITATIVE SOCIAL RESEARCH METHODS 1 12
RBM2260 DIET AND NUTRITION 12
APP3035 RESEARCH METHODS IN PSYCHOLOGY 12
RBM2560 MEDICAL BIOCHEMISTRY 12
Semester 2
RBM2800 CARDIORESPIRATORY AND RENAL PHYSIOLOGY 12
RBM3610 BIOMEDICAL SCIENCE, ETHICS AND VALUES 12
Psychology Elective = to 12 credit points

Year 5

Semester 1
Two x 3rd Year Biomedical Science Units = 12 credit points each
APP3036 HISTORY AND THEORIES IN PSYCHOLOGY 12
APP3023 PSYCHOLOGICAL ISSUES IN THE WORKPLACE 12
Semester 2
RBM3910 PROJECT 12
One 3rd Year Biomedical Science Unit - 12 credit points each
Two x Psychology Elective = 12 credit points each

Third year Biomedical Science units

RBM3264 ADVANCED NERVE AND MUSCLE PHYSIOLOGY 12
RBM3550 GROWTH AND EARLY DEVELOPMENT 12
RBM3590 ADVANCED EXPERIMENTAL TECHNIQUES 12
RBM3720 IMMUNOLOGY 12
RBM3810 WELLNESS 1 12
RBM3640 ADVANCED NEUROSCIENCES 12
RBM3560 GROWTH, DEVELOPMENT AND AGING 12
RBM3660 HUMAN DEVELOPMENTAL AND CLINICAL GENETICS 12
RBM3800 PHARMACOLOGY 12
RBM3820 WELLNESS 2 12
RBM3650 ADVANCED REPRODUCTION AND DEVELOPMENT 12
RBM3960 NUTRITIONAL FRONTIERS 12
Other electives 1 or 2 12

Psychology elective unit options
APP3015 COUNSELLING THEORY AND PRACTICE 12
APP3016 GROUP BEHAVIOUR 12
APP3018 ORGANISATIONS AND WORK 12
APP3019 PSYCHOBIOLOGY 12
FACULTY OF HEALTH, ENGINEERING AND SCIENCE

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Arts elective units that can be substituted for Knowing and Knowledge in first year
(These are all at St Albans Campus)

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SUBJECTS

Below are subject details for courses offered by the Office of Health, Engineering and Science in 2010. IMPORTANT NOTICE: Not all elective subjects for courses offered by the school are listed below. There are numerous elective possibilities that the school can choose to offer and those selected will vary from year to year. Details of these electives will be advised by the school.

HES0001 DIRECTED STUDIES 1A

Locations: To be advised., All campuses of the university where appropriate physical resources are available

Pre-requisites: Satisfactory completion of appropriate prerequisite studies as determined by the course coordinator in which a student, or group of similar students, seeking to undertake this unit is enrolled

Descriptions: A selection of topics from the discipline areas encompassed by the Faculty of Health, Engineering and Science equivalent to a other first year, 12 credit point subjects in those discipline areas offered by the Faculty of Health, Engineering and Science.

Credit Points: 12

Learning Outcomes: Upon completion of this unit, students will be able:

• to identify the key elements in a previously unseen problem associated with the negotiated content area of this unit of study
• to locate the relevant underpinning theory in references available to them
• to use that support and appropriate mathematical and laboratory techniques, where necessary, to apply that information to the novel situation to
• reach a solution to the problem posed.

Class Contact: Depending on the nature of the content areas to be covered it is anticipated that between 48 and 60 hours per semester of lecture/tutorial/seminar/laboratory sessions will be required.

Required Reading: The content of this unit of study will vary according to the specific needs of the students undertaking it the required reading will depend on the content area of the studies undertaken. The required reading will, in general, be the same as or similar to that for other, 12 credit point, first year units of study offered by the Faculty of Health, Engineering and Science.

Assessment: A series of regular assignments and tests as negotiated for each individual student or group of students with a similar background. The assessment regime will be equivalent to that for other first year, 12 credit point units of study offered by the Faculty of Health, Engineering and Science.

HES0003 DIRECTED STUDIES 1C

Locations: To be advised., All campuses of the university where appropriate physical resources are available

Pre-requisites: Satisfactory completion of appropriate prerequisite studies as determined by the course coordinator in which a student, or group of similar students, seeking to undertake this unit is enrolled

Descriptions: A selection of topics from the discipline areas encompassed by the Faculty of Health, Engineering and Science equivalent to a other first year, 6 credit point subjects in those discipline areas offered by the Faculty of Health, Engineering and Science.

Credit Points: 6

Learning Outcomes: Upon completion of this unit, students will be able:

• to identify the key elements in a previously unseen problem associated with the negotiated content area of this unit of study
• to locate the relevant underpinning theory in references available to them
• to use that support and appropriate mathematical and laboratory techniques, where necessary, to apply that information to the novel situation to
• reach a solution to the problem posed.

Class Contact: Depending on the nature of the content areas to be covered it is anticipated that between 48 and 60 hours per semester of lecture/tutorial/seminar/laboratory sessions will be required.

Required Reading: The content of this unit of study will vary according to the specific needs of the students undertaking it the required reading will depend on the content area of the studies undertaken. The required reading will, in general, be the same as or similar to that for other, 6 credit point, first year units of study offered by the Faculty of Health, Engineering and Science.

Assessment: A series of regular assignments and tests as negotiated for each individual student or group of students with a similar background. The assessment regime will be equivalent to that for other first year, 6 credit point units of study offered by the Faculty of Health, Engineering and Science.

HES0002 DIRECTED STUDIES 1B

Locations: To be advised., A series of regular assignments and tests as negotiated for each individual student or group of students with a similar background. The assessment regime will be equivalent to that for other first year, 12 credit point units of study offered by the Faculty of Health, Engineering and Science.

Pre-requisites: Satisfactory completion of appropriate prerequisite studies as determined by the course coordinator in which a student, or group of similar students, seeking to undertake this unit is enrolled

Descriptions: A selection of topics from the discipline areas encompassed by the Faculty of Health, Engineering and Science equivalent to a other first year, 12 credit point subjects in those discipline areas offered by the Faculty of Health, Engineering and Science.

Credit Points: 12

Learning Outcomes: Upon completion of this unit, students will be able:

• to identify the key elements in a previously unseen problem associated with the negotiated content area of this unit of study

HES0004 DIRECTED STUDIES 1D

Locations: To be advised., All campuses of the university where appropriate physical resources are available

Pre-requisites: Satisfactory completion of appropriate prerequisite studies as determined by the course coordinator in which a student, or group of similar students, seeking to undertake this unit is enrolled
Descriptions: A selection of topics from the discipline areas encompassed by the Faculty of Health, Engineering and Science equivalent to a other first year, 6 credit point subjects in those discipline areas offered by the Faculty of Health, Engineering and Science.

Credit Points: 6

Learning Outcomes: Upon completion of this unit, students will be able:
- to identify the key elements in a previously unseen problem associated with the negotiated content area of this unit of study
- to use that support and appropriate mathematical and laboratory techniques, where necessary, to apply that information to the novel situation to
- reach a solution to the problem posed.

Class Contact: Depending on the nature of the content areas to be covered it is anticipated that between 48 and 60 hours per semester of lecture/tutorial/ seminar/laboratory sessions will be required.

Required Reading: The content of this unit of study will vary according to the specific needs of the students undertaking it the required reading will depend on the content area of the studies undertaken. The required reading will, in general, be the same as or similar to that for other, 6 credit point, first year units of study offered by the Faculty of Health, Engineering and Science.

Assessment: A series of regular assignments and tests as negotiated for each individual student or group of students with a similar background. The assessment regime will be equivalent to that for other first year, 6 credit point units of study offered by the Faculty of Health, Engineering and Science.

HES0005 DIRECTED STUDIES 2A

Locations: To be advised., All campuses of the university where appropriate physical resources are available

Pre-requisites: Satisfactory completion of appropriate prerequisite studies as determined by the course coordinator in which a student, or group of similar students, seeking to undertake this unit is enrolled

Descriptions: A selection of topics from the discipline areas encompassed by the Faculty of Health, Engineering and Science equivalent to a other second year, 12 credit point subjects in those discipline areas offered by the Faculty of Health, Engineering and Science.

Credit Points: 12

Learning Outcomes: Upon completion of this unit, students will be able:
- to identify the key elements in a previously unseen problem associated with the negotiated content area of this unit of study
- to locate the relevant underpinning theory in references available to them
- to use that support and appropriate mathematical and laboratory techniques, where necessary, to apply that information to the novel situation to
- reach a solution to the problem posed.

Class Contact: Depending on the nature of the content areas to be covered it is anticipated that between 48 and 60 hours per semester of lecture/tutorial/ seminar/laboratory sessions will be required.

Required Reading: The content of this unit of study will vary according to the specific needs of the students undertaking it the required reading will depend on the content area of the studies undertaken. The required reading will, in general, be the same as or similar to that for other, 12 credit point, second year units of study offered by the Faculty of Health, Engineering and Science.

Assessment: A series of regular assignments and tests as negotiated for each individual student or group of students with a similar background. The assessment regime will be equivalent to that for other second year, 12 credit point units of study offered by the Faculty of Health, Engineering and Science.

HES0006 DIRECTED STUDIES 2B

Locations: To be advised., All campuses of the university where appropriate physical resources are available

Pre-requisites: Satisfactory completion of appropriate prerequisite studies as determined by the course coordinator in which a student, or group of similar students, seeking to undertake this unit is enrolled

Descriptions: A selection of topics from the discipline areas encompassed by the Faculty of Health, Engineering and Science equivalent to a other second year, 12 credit point subjects in those discipline areas offered by the Faculty of Health, Engineering and Science.

Credit Points: 12

Learning Outcomes: Upon completion of this unit, students will be able:
- to identify the key elements in a previously unseen problem associated with the negotiated content area of this unit of study
- to locate the relevant underpinning theory in references available to them
- to use that support and appropriate mathematical and laboratory techniques, where necessary, to apply that information to the novel situation to
- reach a solution to the problem posed.

Class Contact: Depending on the nature of the content areas to be covered it is anticipated that between 48 and 60 hours per semester of lecture/tutorial/ seminar/laboratory sessions will be required.

Required Reading: The content of this unit of study will vary according to the specific needs of the students undertaking it the required reading will depend on the content area of the studies undertaken. The required reading will, in general, be the same as or similar to that for other, 12 credit point, second year units of study offered by the Faculty of Health, Engineering and Science.

Assessment: A series of regular assignments and tests as negotiated for each individual student or group of students with a similar background. The assessment regime will be equivalent to that for other second year, 12 credit point units of study offered by the Faculty of Health, Engineering and Science.

HES0007 DIRECTED STUDIES 2C

Locations: To be advised., All campuses of the university where appropriate physical resources are available

Pre-requisites: Satisfactory completion of appropriate prerequisite studies as determined by the course coordinator in which a student, or group of similar students, seeking to undertake this unit is enrolled

Descriptions: A selection of topics from the discipline areas encompassed by the Faculty of Health, Engineering and Science equivalent to a other second year, 6 credit point subjects in those discipline areas offered by the Faculty of Health, Engineering and Science.

Credit Points: 6

Learning Outcomes: Upon completion of this unit, students will be able:
- to identify the key elements in a previously unseen problem associated with the negotiated content area of this unit of study
- to locate the relevant underpinning theory in references available to them
- to use that support and appropriate mathematical and laboratory techniques, where necessary, to apply that information to the novel situation to
- reach a solution to the problem posed.

Class Contact: Depending on the nature of the content areas to be covered it is anticipated that between 48 and 60 hours per semester of lecture/tutorial/ seminar/laboratory sessions will be required.
Required Reading: The content of this unit of study will vary according to the specific needs of the students undertaking it. The required reading will depend on the content area of the studies undertaken. The required reading will, in general, be the same as or similar to that for other, 6 credit point, second year units of study offered by the Faculty of Health, Engineering and Science.

Assessment: A series of regular assignments and tests as negotiated for each individual student or group of students with a similar background. The assessment regime will be equivalent to that for other second year, 6 credit point units of study offered by the Faculty of Health, Engineering and Science.

HES0008 DIRECTED STUDIES 2D

Locations: To be advised. All campuses of the university where appropriate physical resources are available

Pre-requisites: Satisfactory completion of appropriate prerequisite studies as determined by the course coordinator in which a student, or group of similar students, seeking to undertake this unit is enrolled

Descriptions: A selection of topics from the discipline areas encompassed by the Faculty of Health, Engineering and Science equivalent to a other second year, 6 credit point subjects in those discipline areas offered by the Faculty of Health, Engineering and Science.

Credit Points: 6

Learning Outcomes: Upon completion of this unit, students will be able:

• to identify the key elements in a previously unseen problem associated with the negotiated content area of this unit of study
• to locate the relevant underpinning theory in references available to them
• to use that support and appropriate mathematical and laboratory techniques, where necessary, to apply that information to the novel situation to
• reach a solution to the problem posed.

Class Contact: Depending on the nature of the content areas to be covered it is anticipated that between 48 and 60 hours per semester of lecture/tutorial/ seminar/laboratory sessions will be required.

Required Reading: The content of this unit of study will vary according to the specific needs of the students undertaking it. The required reading will depend on the content area of the studies undertaken. The required reading will, in general, be the same as or similar to that for other, 12 credit point, third year units of study offered by the Faculty of Health, Engineering and Science.

Assessment: A series of regular assignments and tests as negotiated for each individual student or group of students with a similar background. The assessment regime will be equivalent to that for other third year, 12 credit point units of study offered by the Faculty of Health, Engineering and Science.

HES0010 DIRECTED STUDIES 3B

Locations: To be advised. All campuses of the university where appropriate physical resources are available

Pre-requisites: Satisfactory completion of appropriate prerequisite studies as determined by the course coordinator in which a student, or group of similar students, seeking to undertake this unit is enrolled

Descriptions: A selection of topics from the discipline areas encompassed by the Faculty of Health, Engineering and Science equivalent to a other third year, 12 credit point subjects in those discipline areas offered by the Faculty of Health, Engineering and Science.

Credit Points: 12

Learning Outcomes: Upon completion of this unit, students will be able:

• to identify the key elements in a previously unseen problem associated with the negotiated content area of this unit of study
• to locate the relevant underpinning theory in references available to them
• to use that support and appropriate mathematical and laboratory techniques, where necessary, to apply that information to the novel situation to
• reach a solution to the problem posed.

Class Contact: Depending on the nature of the content areas to be covered it is anticipated that between 48 and 60 hours per semester of lecture/tutorial/ seminar/laboratory sessions will be required.

Required Reading: The content of this unit of study will vary according to the specific needs of the students undertaking it. The required reading will depend on the content area of the studies undertaken. The required reading will, in general, be the same as or similar to that for other, 12 credit point, third year units of study offered by the Faculty of Health, Engineering and Science.

Assessment: A series of regular assignments and tests as negotiated for each individual student or group of students with a similar background. The assessment regime will be equivalent to that for other third year, 12 credit point units of study offered by the Faculty of Health, Engineering and Science.

HES0009 DIRECTED STUDIES 3A

Locations: To be advised. All campuses of the university where appropriate physical resources are available

Pre-requisites: Satisfactory completion of appropriate prerequisite studies as determined by the course coordinator in which a student, or group of similar students, seeking to undertake this unit is enrolled

Descriptions: A selection of topics from the discipline areas encompassed by the Faculty of Health, Engineering and Science equivalent to a other third year, 12 credit point subjects in those discipline areas offered by the Faculty of Health, Engineering and Science.

Credit Points: 12

Learning Outcomes: Upon completion of this unit, students will be able:

• to identify the key elements in a previously unseen problem associated with the negotiated content area of this unit of study

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Descriptions: A selection of topics from the discipline areas encompassed by the Faculty of Health, Engineering and Science equivalent to a other third year, 6 credit point subjects in those discipline areas offered by the Faculty of Health, Engineering and Science.

Credit Points: 6

Learning Outcomes: Upon completion of this unit, students will be able:

• to identify the key elements in a previously unseen problem associated with the negotiated content area of this unit of study
• to locate the relevant underpinning theory in references available to them
• to use that support and appropriate mathematical and laboratory techniques, where necessary, to apply that information to the novel situation to
• reach a solution to the problem posed.

Class Contact: Depending on the nature of the content areas to be covered it is anticipated that between 48 and 60 hours per semester of lecture/tutorial/ seminar/laboratory sessions will be required.

Required Reading: The content of this unit of study will vary according to the specific needs of the students undertaking it the required reading will depend on the content area of the studies undertaken. The required reading will, in general, be the same as or similar to that for other, 6 credit point, third year units of study offered by the Faculty of Health, Engineering and Science.

Assessment: A series of regular assignments and tests as negotiated for each individual student or group of students with a similar background. The assessment regime will be equivalent to that for other third year, 6 credit point units of study offered by the Faculty of Health, Engineering and Science.

JCB0101 BIOLOGY 1

Locations: Footscray Park,

Pre-requisites: Nil.

Descriptions: Biological Organisation, Macromolecules and Functional Group Chemistry (structure and form), Functioning Cells and organisation, Microscopy, Animal vs Plant Cell Structure, Endomembrane System, Organelles, Mitochondria vs Chloroplasts, Mitosis/Meiosis, Membranes: Fluid Mosaic Model, Passive Movement Across Membranes, Active Movement Across Membranes, Endo/Exo cytosis, Cellular Energies: Oxidative Respiration; Energy Releasing Pathways and energy metabolism. Cell signalling and cell junctions, Structure and Function of the animal body, tissue types, organs and organ system, regulating body temperature and homeostasis, protection support and movement, epithelial covering, skeletal system, Neural Signalling; Sensory reception, Basic brain functions and parts, muscle contraction.

Credit Points: 12

Learning Outcomes: To be advised.

Class Contact: 86 hours over the semester accounts for a mixture of lectures, tutorials and laboratory classes.


Assessment: To be advised.

JCB0102 BIOLOGY 2

Locations: Footscray Park, and equivalent

Pre-requisites: JCB0101 Biology 1 or equivalent


Credit Points: 12

Learning Outcomes: To be advised.

Class Contact: 86 hours over the semester accounts for a mixture of lectures, tutorials and laboratory classes.


Assessment: Practical component is worth 15%. Problem based assignments are worth 10%. There will be three class tests worth 5% each. End of semester exam (3 hours) is worth 60%.

JCB0111 CHEMISTRY 1

Locations: Footscray Park,

Pre-requisites: Nil.

cova lent bonding. Binary ionic compounds. Electronegativity and dipole moments,
Hydrogen Bonding, Lewis structures, Electron and Molecular arrangements, Bond
Angles, Octet and Duet rules - exceptions to these rules, VSEPR, Hybridization and
the Localized Electron Model. Resonance and Formal charges. Extension Studies
in Covalent Bond Energies, Chemical complexes and ligands. Extension Studies in
Molecular orbital theory and Bond Orders. Stoichiometry and Reactions. Atomic
Masses. Mole concept, Empirical and Molecular formulas. Examining reaction
types and their equation balancing. Calculations involving limiting reactions and
% yields, percent compositions. Solution Chemistry including ppm, dilutions, precipit ation reactions (including selective precipitation), molecular, ionic and net
ionic equations, acid base reactions, conjugate acid base pairs. Intermolecular forces
and dissociation. Back titrations. Spectrophotometric analysis and data acquisition
from such analyses. Organic Chemistry, Nomenclature and reaction mechanisms
Organic nomenclature (main functional groups). Isomerisation. Reaction types and
introduction to reactivity. Extension Studies in chirality and enantiomericity and
mechanisms focussing on, alkanes, alkenes and carbonyl functional groups (eg
hydrohaloations, Aldol Condensations etc) Redox Reactions Oxidation states,
half equations, redox titrations. Biological and industrial redox reactions. Extension
Studies in Redox in Photography Gases Daltons, Boyle’s, Charles and Avogadro’s
stoichiometry. Extension studies in corrections for non ideal gases (real gases).
Solution & Colligative Properties Solubility effects. Vapour Pressures of Solutions,
Raoult’s Rule, mobility, Boiling-Point Elevation, Freezing-Point Depression and
Osmotic Pressure. Extension studies in phase diagrams: Analysis - AAS and other
spectrophotometric methods - standard preparation, calibration curves Extension
Studies in NMR (Theory and application) proton NMR-proton environments,
splitting patterns, coupling constants, electronegativity effects, functional group
identification. Sample preparation-IR (Theory and application) -functional group
identification and utility in conjunction with NMR-Errors in Analysis -examining errors
in experimentation-statistical analysis

Credit Points: 12

Learning Outcomes: To be advised.

Class Contact: 96 hours over the general semester accounts for a mixture of
tutorials, laboratory classes and workshops. Additional 28 hours accounts for
Extension Studies and their associated tutorials, problem based research projects and
practicals.

Required Reading:

Assessment: Practical component is worth 15%. Extension Studies and associated
exams and problem based enquiry/assignments are worth 18%. There will be three
class tests worth 4% each. End of semester general exam (3 hours) is worth 55%.
General exam and practical component must be passed for successful completion of
subject.

JCM0101 INFORMATION TECHNOLOGY 1

Locations: Footscray Park,

Pre-requisites: Nil.

Descriptions: Journal Databases; Literature Searching and accessing using the
Internet. Learning and utilising, WebCT, PowerPoint, Excel, Introduction to
ChemDraw, DreamWeaver or alternative web development tool. Introductory Robotic
Programming

Credit Points: 12

Learning Outcomes: To be advised.

Class Contact: 90 hours over the general semester accounts for a mixture of
tutorials, laboratory classes and workshops. Additional 34 hours accounts for
Extension Studies and their associated tutorials, problem based research projects and
practicals.

Required Reading:

Assessment: Practical component is worth 16%. Extension Studies and associated
exams and problem based enquiry/assignments are worth 20%. There will be three
class tests worth 3½ each. End of semester general exam (3 hours) is worth 55%.
General exam and practical component must be passed for successful completion of
subject.

JCM0102 INFORMATION TECHNOLOGY 2

Locations: Footscray Park,

Pre-requisites: Nil.

Descriptions: Journal Databases; Literature Searching and accessing using the
Internet. Learning and utilising, WebCT, PowerPoint, Excel, Introduction to
ChemDraw, DreamWeaver or alternative web development tool. Introductory Robotic
Programming
Credit Points: 12

Learning Outcomes: To be advised.

Class Contact: 52 hours over the semester accounts for a mixture of lectures, tutorials and computer classes.

Required Reading: GraphPad Prism or SIGMA PLOT. ChemDraw Pro. Introduction to MathWork’s MATLAB, Thomson ResearchSofts EndNote, Macromedia Director, Robotic Programming, MDSolids, Adobe Premier or alternative media authoring program. Students must complete four units to be eligible to complete JCM0102. Below is a guideline as to the units required for particular study pathways: Engineering: Introduction to MathWork’s MATLAB, MDSolids, GraphPad Prism or SIGMA PLOT, Thomson ResearchSofts EndNote. Science/Health Science: Macromedia Director, GraphPad Prism or SIGMA PLOT, ChemDraw, Thomson ResearchSoft s EndNote.

Assessment: A combination of assignments/presentation in each of the 4 areas chosen (25%) each/contributes to overall mark which accumulates to 100%.

JCM0112 MATHEMATICS 1

Locations: Footscray Park,

Pre-requisites: Nil.

Descriptions: Numeracy: Advance Arithmetic and Fractions; Ratios, Percentages and Proportions; SI Units and Scientific Notations Mathematic Notation: Number Systems (Reals, Integers, etc); Domain and Range; Continuity; Functions and Relations; Basic Set Theory; Boolean Algebra: Algebra: Basic Algebra; Binary Expansion Theorem; Indices and Logarithms and their application to Science/Engineering Graphing for Engineers: Linear Equations; Conic Sections; Trigonometric Functions Graphing for Scientists: Linear Equations; Quadratic Equations; Trigonometric Functions Introductory Calculus: Limits; Differentiation; Anti-Differentiation and Integration Applications involving Calculus: Tangents and Normal Lines; Approximation; Curve Sketching (Cubic Functions); Maximum/Minimum Problems; Rates of Change. Students must complete four units to be eligible to complete JCM0112. Below is a guideline as to the units required for particular study pathways: Engineering: Algebra, Graphing for Engineers, Introductory Calculus, Applications involving Calculus. Science/Health Science (Mathematical): Algebra, Mathematical Notation, Graphing for Scientists, Introductory Calculus. Science/Health Science (Non Mathematical): Numeracy, Mathematical Notation, Algebra, Graphing for Scientists.

Credit Points: 12

Learning Outcomes: To be advised.

Class Contact: 72 hours over the semester accounts for a mixture of lectures, tutorials and laboratory classes.

Required Reading: Nil.

Assessment: There will be three class tests worth 10% each. End of semester exam (3 hours) is worth 70%.

JHL0110 ENGLISH LANGUAGE & COMMUNICATIONS SKILLS A

Locations: Footscray Park,

Pre-requisites: Nil.

Descriptions: Communications skills that encompass synthesis, summarising, referencing, report writing, literature review writing and essay writing are developed primarily but not exclusively through a scientific context. Presenting ideas and concepts in ways other than in the written and verbal form will be examined and developed as will aspects of science journalism and science media. Debating and communicating with and for a variety of audiences will be developed as will presentations skills for academic purposes. Students will be engaged in teaching and communicating science to Primary/Secondary school students via the Professor Science show, producing science resources for teachers, parents and students alike. Students will also be engaged in two of several possible projects that are problem based and/or community based that will further foster communication skills.

Credit Points: 12

Learning Outcomes: To be advised.

Class Contact: 62 hours over the semester accounts for a mixture of tutorials, workshops and computer classes.

Required Reading:

Assessment: Exam comprises 50%, Problem based/Community based Projects comprise 20%, Assignments comprise 15%, Professor Science Show comprises 15%. All aspects of the course are required to be passed.

JSP0102 PHYSICS 1

Locations: Footscray Park,

Pre-requisites: Nil.

Descriptions: Measurement: Significant Figures, Scientific Notation, Standards of measurement, Unit Conversion, Dimensional Analysis. One-Dimensional Kinematics Position, Distance and Displacement; Average Speed and Velocity; Acceleration; Motion with constant acceleration; Applications of the Equations of Motion; Free Falling Objects Vectors: Scalars; Vector Components; Adding and Subtracting vectors; Position, Displacement, Velocity, and Acceleration Vectors; Relative Motion. Two Dimensional Kinematics: Motions in Two Dimensions, Introduction to Projectile Motion, Launch angles. Newton’s Laws of Motion, Force and Mass; the three laws of motion; Forces in two dimensions. Frictional Forces, Strings and Springs; Translational Equilibrium, Circular Motion, Work and Kinetic Energy; Work done by constant force, Kinetic energy and work, work done by variable forces, power. Potential Energy and Conservative forces: potential Energy and work, conservation of mechanical energy. Linear momentum and collisions: Momentum and Newton’s second Law, impulse, conservation of linear momentum, inelastic collisions, elastic collisions, centre of mass. Introductory statics. Rotational energy, Moment of Inertia, Torque (to be expanded upon alongside power in second semester, physics 2)

Credit Points: 12

Learning Outcomes: To be advised.

Class Contact: 92 hours over the general semester accounts for a mixture of tutorials, laboratory classes and problem based work shops.

Required Reading:

Assessment: Three small class tests are worth 5% each. End of semester exam (3 hours) is worth 50%. Problem and Project Bases Projects and associated assignments and presentations are 35%. End of semester exam and all problem based projects must be passed to secure a pass in this subject.

JCM0113 MATHEMATICS 2

Locations: Footscray Park,

Pre-requisites: JCM0112 Mathematics 1


Credit Points: 12

Learning Outcomes: To be advised.

Class Contact: 72 hours over the semester accounts for a mixture of lectures, tutorials and laboratory classes.

Required Reading: Nil.
JSP0103 PHYSICS 2
Locations: Footscray Park,
Pre-requisites: JSP0102 or equivalent


Credit Points: 12
Learning Outcomes: To be advised.
Class Contact: 92 hours over the general semester accounts for a mixture of tutorials, laboratory classes and problem based work shops.
Required Reading: Giancoli, D.C., Physics for Scientists and Engineers with Modern Physics 3rd Edition Prentics Hall or equivalent.
Assessment: A series of regular assignments and tests as negotiated for each individual student or group of students with a similar background. the assessment regime will be equivalent to that for a first year physics subject in a technological degree.

SAF2101 SAFETY
Locations: Footscray Park,
Pre-requisites: Nil.

Descriptions: This unit gives an overview of the safety person's knowledge, skills and abilities. It links the common hazards and their risks and the how levels of safety interventions involve many inter-disciplines such as low, hygiene monitoring and management, toxicology, human factors, epidemiology, and organisational behaviour. The nature of safety in various fields will be examined in the contexts of both historical and current administrative and technical requirements. Classification of hazards is linked with foundation science topics and risk interventions with specialist areas to minimise or prevent harm or damage. Protection and emergency procedures will also be covered in this unit.
Credit Points: To be advised.
Learning Outcomes: On successful completion of this unit, students are expected to be able to:
- Recognise the scientific concepts that relate to the mechanical, physical, chemical, biological and psychological hazards;
- Identify the fundamental ways of establishing and maintaining safety programs, and risk management.
Class Contact: Sixty (60) hours or equivalent for one semester comprising lectures and practical workshops.

REP1000 DIRECTED STUDIES IN PHYSICS
Locations: Footscray Park,
Pre-requisites: There are no prerequisites for this subject but Year 11 or equivalent physics background is preferred.

Descriptions: A selection of topics from the following: Kinematics and Mechanics Thermodynamics Electricity and Magnesium Electronics Optics Wave Motion and Sound Quantum Physics Nuclear Physics
Credit Points: 12
Learning Outcomes: To introduce students to the principles and techniques of physics and their applicability. It is principally designed for students who do not have a strong physics background or those who do not intend to major in physics or the allied technologies. Alternatively it can be used by students seeking a basic knowledge and understanding of physics with a view to examining whether they wish to study physics further. The detailed curriculum for an individual student, or a group of students with a common background, will depend on their prior studies in the area and the purpose to which they wish to put the subject. The detailed content will, therefore, vary but will, in general be taught at a level equivalent to a standard first year physics subject in a technological degree.
Class Contact: Equivalent to 36 hours per semester of lecture/tutorial/demonstration and laboratory experiences per semester.
Required Reading: Giancoli, D.C., Physics for Scientists and Engineers with Modern Physics 3rd Edition Prentics Hall or equivalent.
Assessment: A series of regular assignments and tests as negotiated for each individual student or group of students with a similar background. the assessment regime will be equivalent to that for a first year physics subject in a technological degree.

SAF2102 SAFETY, HEALTH AND WELLNESS
Locations: Footscray Park,
Pre-requisites: Nil.

Descriptions: This unit covers preventative strategies to reduce and control risk factors. Safety programs, management of risk and rehabilitation will be described and linked with a discussion of safety, health and wellness in society. How the person and their physical and social environment contribute to the psychosocial aspects of wellbeing will be integrated with studies of advocacy for safety cultures. Topics will cover how the values of the community and economic resources and support of correlate with the knowledge, skill and ability to manage risks. These values are expressed in laws and management systems as the change of individuals attitudes in their communities, which tends to define the liveability associated with safety, security and health.
Credit Points: To be advised.
Learning Outcomes: On successful completion of this unit, students are expected to be able to:
- Recognise the causation of incidents based on risk determinants and risk factors;
- Identify the basis of prevention strategies;
- Discuss the inequalities in the distribution of health;
- Discuss the benefits of monitoring and evaluating safety, health and wellness.
Class Contact: To be advised.
On successful completion of this unit, students are expected to be able to:

- Use available resources to plan sampling strategies, in order to measure for conditions and contaminants.

**Class Contact:** Seventy-two (72) hours or equivalent for one semester comprising lectures, tutorials and practical classes.


**Assessment:** In order to obtain a pass or higher in this graded unit, normally all components of assessment must be passed. Test Topic questions 30%

**SAF2203 RISK ASSESSMENT**

**Locations:** Footscray Park,

**Pre-requisites:** SAF2101 - SAFETY or equivalents.

**Descriptions:** This unit covers the methods for sampling and monitoring stressors in environments. Topics will focus on the design of studies to assess the levels of exposure to risk determinants and risk factors. These determinants or factors can lead to a range of adverse outcomes from the perception of discomfort to the levels of irreversible adverse events, which includes fatality. Analysis of contaminants or conditions associated with these outcomes will be examined in the context of their suitability in giving valid and reliable information on the quantitative and qualitative values of risks.

**Credit Points:** To be advised.

**Learning Outcomes:** On successful completion of this unit, students are expected to be able to:

- Identify processes to rehabilitate and restore function from harm or damage arising from exposure to specific risks.

**Class Contact:** Forty-eight (48) hours or equivalent for one semester comprising lectures, practical workshops and problem-based projects.


**Assessment:** In order to obtain a pass or higher in this graded unit, normally all components of assessment must be passed. Test To be advised by the lecturer 20%

**SAF3105 SAFETY SCIENCE**

**Locations:** Footscray Park,

**Pre-requisites:** SAF2203 - RISK ASSESSMENT or equivalent.

**Descriptions:** This unit shows the roles of toxicology in the risk assessment of new substances or process and epidemiology in the risk assessment of current exposures to substances and conditions. The unit covers the design of studies that add towards knowledge used to determine whether substances or materials should either be discontinued or not allowed to proceed to an initial production stage, or whether they can be permitted to be used but with specific interventions to reduce risk. Toxicology topics include descriptions of mechanisms of action, distribution and elimination of some specific substances. The unit describes how certain molecular, biological and clinical parameters are applied in the overall process of assessing a new substance or process. For substances and conditions that are currently used, the discipline of epidemiology gives designs to assess and test associations with causative agents or beneficial exposures (treatments) that may have adverse outcomes in general populations. The process for designing risk interventions to improve public safety is set within the linking of agents with harm, injury or disease in specific environments.

**Credit Points:** To be advised.

**Learning Outcomes:** On successful completion of this unit, students are expected to be able to:

- Locate and use information that relates to the safe assessment of new materials;
- Use information that relates to the estimate of risk with current exposures.

**Class Contact:** Sixty (60) hours or equivalent for one semester comprising lectures, practical workshops and problem-based projects.

**Required Reading:** Critch, N. (Comp.). (2009). Reader for SAF3105. Melbourne, Australia: Victoria University.
Assessment: Test To be advised by the lecturer 25%. In order to obtain a pass or higher in this graded unit, normally all components of assessment must be passed.

SAF3106 SAFETY HUMAN FACTORS

Locations: Footscray Park,

Pre-requisites: SAF2203 - RISK ASSESSMENT or equivalent.

Descriptions: This unit shows the role of ergonomics or human factors in safety. It covers approaches and methods that are applied to product design and evaluation, assessment and design of the work, analysis of tasks or activities, analysis and evaluation of systems, as well as analysis of human factors in incidents that are used to prevent further injury.

Credit Points: To be advised.

Learning Outcomes: On successful completion of this unit, students are expected to be able to:

- Locate and use information for evaluating human factors;
- Apply ergonomic methodologies in order to report on improving performance in specific environments.

Class Contact: Forty-eight (48) hours or equivalent for one semester comprising lectures, practical workshops and problem-based projects.


Assessment: In order to obtain a pass or higher in this graded unit, normally all components of assessment must be passed.

Test To be advised by the lecturer 25%

SAF3107 RISK MANAGEMENT

Locations: Footscray Park,

Pre-requisites: SAF2102 - SAFETY, HEALTH AND WELLNESS or equivalent.

Descriptions: The terms of risk analysis are specifically defined to show that risk is a process of risk assessment as well as risk management. For risk management, the risk aversion and risk assessment need to be qualified as being distinct from risk assessments that are more quantified. Societal considerations and expectations when reducing the consequences of exposures to hazards. Definitions and levels of analysis are specifically examined in this unit.

Credit Points: To be advised.

Learning Outcomes: On successful completion of this unit, students are expected to be able to:

- Examine bias in risk communication;
- Prepare risk assessments;
- Evaluate the process of setting public strategies for risk reduction.

Class Contact: Thirty-six (36) hours or equivalent delivered online for one semester comprising lectures and tutorials.


Assessment: In order to obtain a pass or higher in this graded unit, normally all components of assessment must be passed. Tutorial Participation topic questions 20%
School of Biomedical and Health Sciences

Below are details of courses offered by the School of Biomedical and Health Sciences in 2010. This information is also available online on the University's searchable courses database at www.vu.edu.au/courses

NOTE: Courses available to International students are marked with the (I) symbol.

DOCTOR OF PHILOSOPHY

Course Code: EPHC, EPLC (LOCAL STUDENTS)

Campus: Werribee, City Flinders, Sunbury, Various, dependent on the research field.

Course Objectives: The Doctor of Philosophy (PhD) is normally undertaken purely by research on a topic that is agreed between the student and supervisor and is endorsed through university processes. Students may include some coursework studies during their candidature as recommended by the university. Academic staff, with suitable qualifications and proven research skills, supervise students in various research fields across health, engineering and science.

The Doctor of Philosophy (PhD) is normally undertaken purely by research on a topic that is agreed between the student and supervisor and is endorsed through university processes. Students may include some coursework studies during their candidature as recommended by the university. Academic staff, with suitable qualifications and proven research skills, supervise students in various research fields across health, engineering and science.

Course Duration: To be advised.

Admission Requirements: Applicants should normally have completed either a Masters degree or a four year undergraduate degree with Honours or its equivalent at a high standard.

Course Structure: The course normally requires three years of full-time study or part-time equivalent.

School of Architectural, Civil and Mechanical Engineering

Civil and Building Stream

Course Code EPHC

VCC8001 RESEARCH THESIS FULL TIME 48
VCC8002 RESEARCH THESIS FULL TIME 48
VCC8011 RESEARCH THESIS (PART-TIME) 24
VCC8012 RESEARCH THESIS (PART-TIME) 24

Mechanical Stream Course Code: EPHC

VMR8001 RESEARCH THESIS 1 FULL TIME 48
VMR8002 RESEARCH THESIS 2 FULL TIME 48
VMR8011 RESEARCH THESIS 1 PART TIME 24
VMR8012 RESEARCH THESIS 2 PART TIME 24

Australian Food Marketing Centre

Course Code: EPHC

REM8001 RESEARCH THESIS 1 FULL TIME 48
REM8002 RESEARCH THESIS 2 FULL TIME 48
REM8011 RESEARCH THESIS 1 PART TIME 24
REM8012 RESEARCH THESIS 2 PART TIME 24

School of Biomedical and Clinical Sciences

Biomedical Sciences Stream

Course Code: EPHC

RBM8001 RESEARCH THESIS 1 FULL TIME 48
RBM8002 RESEARCH THESIS 2 FULL TIME 48
RBM8011 RESEARCH THESIS 1 PART TIME 24
RBM8012 RESEARCH THESIS 2 PART TIME 24

Health Sciences Stream

Course Code: EPHC or EPLC

HHM6800 RESEARCH THESIS (FULL-TIME) 48
HHM6801 RESEARCH THESIS (PART-TIME) 24

School of Computer Science and Mathematics

Course Code: EPLC

RCM8001 RESEARCH THESIS 1 FULL TIME 48
RCM8002 RESEARCH THESIS 2 FULL TIME 48
RCM8011 RESEARCH THESIS 1 PART TIME 24
RCM8012 RESEARCH THESIS 2 PART TIME 24

Centre for Environmental Safety and Risk Engineering

Course Code: EPLC

VQT8001 RESEARCH THESIS 1 FULL TIME 48
VQT8002 RESEARCH THESIS 2 FULL TIME 48
VQT8011 RESEARCH THESIS 1 PART TIME 24
VQT8012 RESEARCH THESIS 2 PART TIME 24

School of Electrical Engineering Electrical

Electrical Engineering Stream

Course Code: EPHC

VEE8001 RESEARCH THESIS 1 FULL TIME 48
VEE8002 RESEARCH THESIS 2 FULL TIME 48
VEE8011 RESEARCH THESIS 1 PART TIME 24
VEE8012 RESEARCH THESIS 2 PART TIME 24

Physics Stream

Course Code: EPHC

RPH8001 RESEARCH THESIS 1 FULL TIME 48
RPH8002 RESEARCH THESIS 2 FULL TIME 48
RPH8011 RESEARCH THESIS 1 PART TIME 24
RPH8012 RESEARCH THESIS 2 PART TIME 24

School of Molecular Sciences Biotechnology Stream

Course Code: EPHC

RBT8001 RESEARCH THESIS 1 FULL TIME 48
RBT8002 RESEARCH THESIS - SEM 2 (FULL-TIME) 48
RBT8011 RESEARCH THESIS 1 PART TIME 24
RBT8012 RESEARCH THESIS - SEM 2 (PART-TIME) 24
The course objectives are:

- to provide an articulation pathway that links to the more advanced Bachelor of Health Science (Dermal Therapies).
- to produce knowledgeable and competent Associate Degree graduates who can successfully pursue challenging and interesting careers in the dermal industry;
- to provide an articulation pathway that links to the more advanced Bachelor of Health Science (Dermal Therapies).

This four-semester online Associate Degree in Dermal Therapies will provide units of study in anatomy and physiology, psychology, research and scientific methodology, skin disorders, laser / IPL theory, and other topics in line with advances in the beauty industry. Students will be able to select from streams specialising in dermal, business, or training. The course will be supported by limited clinical and practical experiences via burst mode study in Melbourne dependant on the chosen stream.

**Career Opportunities:** Graduates should be able to pursue a career in the dermal industry. Depending upon the elective stream chosen, graduates may choose to focus their career path in training within the industry, management of salons or clinics, or as practitioners in laser and light procedures.

**Course Duration:** 2 years

**Admission Requirements:** Admission Requirements for the Associate Degree in Dermal Therapies will be successful completion of the Diploma of Beauty Therapy (WRB50105) and demonstration of recent work in the industry for at least two years equivalent full-time, and current employment in the industry. It is important that all intending students have acquired explicit knowledge gained via specific units at the Diploma level prior to entry. These units include BSBMKG404A, Forecast Market and Business Needs (or equivalent), BSB804404A Undertake business planning (or equivalent), WRB85514A Provide superficial lymph drainage massage (or equivalent) along with one of the following elective streams: WRB85503B Provide permanent epilation or WRB85510A Provide the spa program.

**Course Structure:** The course is delivered online, with support from mentoring and learning in the workplace. Students will need to attend some burst mode sessions in Melbourne at our City campuses, the number of which will be dependant on the elective stream selected. The course is 2 years full time or part time equivalent. Students are expected to be employed and working in the industry at the same time.

**Year 1, Semester 1**

- **HHD1101** INTRODUCTION TO DERMAL THERAPY STUDIES 12
- **BSBWOR502A** ENSURE TEAM EFFECTIVENESS 0
- **VPAU084** MANAGE COMPLIANCE WITH LEGAL, REGULATORY AND ETHICAL REQUIREMENTS IN AN ORGANISATIONAL ENVIRONMENT 0
- **BSBMGT502B** MANAGE PEOPLE PERFORMANCE 0
- **HHD1203** DERMAL WORKPLACE PRACTICES 12
- **FNSACCT404B** MAKE DECISIONS WITHIN A LEGAL CONTEXT 0

**Year 2, Semester 1**

- **HHD2101** DERMAL HEALTH SCIENCE 1 12
- **HHD2102** DERMAL HEALTH SCIENCE 2 12
- **BSBMGT502B** MANAGE PEOPLE PERFORMANCE 0
- **BBH3100** BUSINESS INTEGRATED LEARNING 12
- **HLTEN506A** APPLY PRINCIPLES OF WOUND MANAGEMENT IN THE CLINICAL ENVIRONMENT 0
### BACHELOR OF CHINESE MEDICINE (ACUPUNCTURE AND HERBS)

**Course Code:** HBAH  
**Campus:** St Albans  
**Course Objectives:** (For continuing students only)

The aims of the course are to:

- provide students with detailed training in Chinese medical theory and practice, including acupuncture and Chinese herbal medicine;  
- provide students with comprehensive Chinese medical skills in both acupuncture and Chinese herbal medicine, incorporating adjunctive approaches such as meditation, health enhancement and CM dietary modalities;  
- ensure that students practise from Chinese medical theory, whilst integrating western medical information as appropriate, to ensure that graduates are safe and competent in the practice of Chinese Medicine;  
- provide students with quality clinical experiences in hospitals and complementary health clinics from Year One of the program;  
- provide students with the option of undertaking a clinical internship placement in an appropriate hospital setting in China or other countries; and  
- provide students with opportunities for research and higher degree in Chinese Medicine on the completion of their undergraduate degree.

**Course Duration:** To be advised.  
**Admission Requirements:** To qualify for admission to the course applicants must have satisfactorily completed the Victorian Certificate of Education (VCE), or equivalent with a study score of at least 20 in Units 3 and 4 English. It is also desirable, but not essential, that applicants have completed VCE level studies in biology, chemistry, psychology, or Asian studies. Applicants who do not meet the normal admission requirements but who possess appropriate educational qualifications, or work experience which would enable them to successfully undertake the course, will be considered for admission.

**Course Structure:** The course is offered on a full-time basis over four years or part-time equivalent. Course Location This course is offered at the St Albans campus.

Clinical Placement Students will be required to undergo a Victorian Police Check before commencing placement subjects. Police checks need to be conducted annually throughout the program. Prospective and continuing students should be aware that not passing relevant police checks may restrict access to clinical placements necessary for graduation. Students will be required to show evidence of a current first aid in the workplace level 2 qualification whilst enrolled in the clinical practice unit. Teaching clinics operate 50 weeks per year, and students will be required to attend clinical sessions on a rotation basis including outside of semester hours to maintain a public service and provide continuity of patient care.

All students will study both Acupuncture and Chinese Herbal Medicine throughout the four years of this integrated program.

**Year Three**  
**Semester One**  
- HHT3100 CHINESE MEDICAL MICRO-SYSTEMS 6  
- HHT3103 CHINESE MEDICINE CLINICAL PRACTICE 3 16  
- HHT3104 MAJOR CLASSICS - SHANG HAN LUN & WENG BING 1 8  
- HHT3106 INTERNAL MEDICINE 1 6  
- HHT3108 CHINESE MEDICINE THERAPEUTIC APPLICATIONS 1 6  
- RBM3921 WESTERN MEDICAL DIAGNOSIS AND INTERVENTIONS 1 6

**Semester Two**  
- HHT3003 COUNSELLING SKILLS FOR CHINESE MEDICAL PRACTICE 8  
- HHT3105 MAJOR CLASSICS-SHANG HAN LUN WENG BING 2 6  
- HHT3203 CHINESE MEDICINE CLINICAL PRACTICE 4 16  
- HHT3207 INTERNAL MEDICINE 2 6  
- HHT3111 CHINESE MEDICINE THERAPEUTIC APPLICATIONS 2 6  
- RBM3922 WESTERN MEDICAL DIAGNOSIS AND INTERVENTIONS 2 6

**Year Four**  
**Semester One**  
- HHT4002 RESEARCH METHODS FOR CHINESE MEDICINE 6  
- HHT4108 CHINESE MEDICINE TRAUMATOLOGY 6  
- HHT4100 CASE CONFERENCING AND CLINICAL ISSUES 1 6  
- HHT4101 CHINESE MEDICINE OBSTETRICS AND GYNAECOLOGY 6  
- HHT4103 CHINESE MEDICINE CLINICAL INTERNSHIP 1 16  
- RBM4923 WESTERN MEDICAL DIAGNOSIS AND INTERVENTIONS 3 8

**Semester Two**  
- HHT4004 PROFESSIONAL ISSUES FOR CHINESE MEDICAL PRACTICE 6  
- HHT4200 CASE CONFERENCING AND CLINICAL ISSUES 2 6  
- HHT4201 CHINESE MEDICINE PAEDIATRICS 6  
- HHT4203 CHINESE MEDICINE DERMATOLOGY 6  
- HHT4204 CHINESE MEDICINE CLINICAL INTERNSHIP TWO 16  
- RBM4924 WESTERN MEDICAL DIAGNOSIS AND INTERVENTIONS 4 8

**Graduation Requirements**

In order to be awarded a Bachelor of Chinese Medicine (Acupuncture and Herbs) degree, students must pass all components of assessment and satisfactorily complete all theoretical and clinical hurdle requirements to proficiency standards as specified in Ferrigno, P. (Compiler). (2005). School of Health Sciences Chinese Medicine Clinical Logbook (CD and manual). Melbourne: Victoria University of Technology, School of Health Sciences, CM Unit; and Mathieson, L. (Producer). (2005). School of Health Sciences Chinese Medicine Clinical Practice demo CD (CD). Melbourne: Victoria University of Technology, School of Health Sciences, CM Unit.
Students should presume that the content in those references constitutes Required Reading throughout the entire Chinese Medicine degree.

Professional Recognition

It is expected that graduates will meet the requirements of the Chinese Medicine Registration Board of Victoria and be eligible for membership of the major professional associations.

**BACHELOR OF SCIENCE (CLINICAL SCIENCES)**

Course Code: HBOS

Campus: City Flinders

Course Objectives: This degree prepares graduates for entry into the Master of Health Science Osteopathy. To register as osteopaths in Australia students must complete both degrees. Core studies include anatomy, osteopathic science, physiology and biochemistry. Students also complete a clinical practicum, which includes fieldwork and clinical practice visits.

The aims of the course are to:

- prepare graduates for entry into the Master of Health Science - Osteopathy. Upon completion of the Masters degree, a graduate will be eligible to apply for registration as an osteopath;
- provide an education which contributes to the individual’s personal, professional and intellectual growth;
- provide an education which contributes to the preparation of competent primary health care practitioners who, upon graduation from the Masters degree, are able to: apply osteopathic principles to formulate and prescribe suitable and safe management of patients; assess the health status of the patient, including physical, socio-economic and psychological factors; communicate with the patient and interact with other health care providers and advisers for the benefit of the patient.

Course Duration: To be advised.

Admission Requirements: To qualify for admission to the course applicants must have completed the Victorian Certificate of Education (after not more than two attempts), or equivalent, Units 3 and 4 in Chemistry and one of Physics or Mathematics (any), with a study score of at least 20 in English. Applicants over the age of 21 who have not attempted an approved year 12 course in the three years prior to application may apply to enter the course but are still required to meet the prerequisite study hurdles. Students will be required to undergo a Victoria Police check before commencing placement subjects. Police checks need to be conducted annually throughout the program. Prospective and continuing students should be aware that not passing relevant police checks may restrict access to clinical placements necessary for graduation.

Course Structure: Year One

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| Year Two | HHU1272 | CLINICAL PRACTICUM 2 | 6  |
|          | HHY1271 | PATHOLOGY 1 | 6  |
|          | RMS1272 | BIOCHEMISTRY (OSTEOPATHY) 2 | 6  |

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| Year Three | HHC3173 | BIOMECHANICS 3 | 6  |
|            | HHD3174 | CLINICAL DIAGNOSIS & MANAGEMENT 4 | 6  |
|            | HHO3175 | OSTEOPATHIC SCIENCE 5 | 8  |
|            | HHP3174 | PHYSIOLOGY 4 | 6  |
|            | HHS3171 | PSYCHOLOGY & SOCIAL SCIENCES 1 | 6  |
|            | HHU3175 | CLINICAL PRACTICUM 5 | 8  |
|            | HHY3174 | PATHOLOGY 4 | 8  |

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Clinical Training

For registration as an Osteopath, students must have completed the minimum clinical subject attendance requirements over the combined Bachelor of Science - Clinical Sciences and Master of Health Science - Osteopathy courses. Completion of the Bachelor of Science - Clinical Sciences course alone does not make graduates eligible for registration as Osteopaths.

Teaching clinics operate 50 weeks per year, and students will be required to attend clinical sessions on a rotation basis including outside of semester hours to maintain a public service and provide continuity of patient care.
Disciplinary Failure
A student who has been awarded a fail in a subject on disciplinary grounds, e.g. for cheating, may not enrol in any further subjects in any major sequence of which the subject forms a part without the permission of the Faculty Progress Committee.

Graduation Requirements
In order to be awarded a Bachelor of Science - Clinical Sciences, students must complete the hurdle clinical requirements.

Career Opportunities
Students will obtain knowledge and skills to equip them for professional careers as osteopaths in today’s international market.

Professional Recognition
All graduates will be eligible for registration with the Osteopaths Registration Board of Victoria, and for registration as an osteopath in all other Australian states by mutual recognition with the Osteopaths Registration Board. Registered Osteopaths are also eligible for membership with other professional associations.

BACHELOR OF HEALTH SCIENCE (PARAMEDIC) (CONVERSION DEGREE)
Course Code: HBPA
Campus: St Albans, On-line

Course Objectives: This course aims to provide a route to a degree qualification in paramedic practice for qualified paramedics who currently hold an Associate Diploma or equivalent. This course enhances the knowledge and skills of paramedics enabling them to function more effectively.

The aims of the course are to:
• provide a route to a degree qualification in paramedic practice for qualified paramedics who currently hold an Associate Diploma or equivalent;
• enhance the knowledge and skills of paramedics enabling them to function more effectively in their current practice;
• provide opportunities for paramedic practitioners to explore practice behaviours and attitudes in light of contemporary multicultural and multidisciplinary environments;
• stimulate paramedic practitioners to use problem solving skills when planning and implementing prehospital emergency care;
• produce graduate paramedics who can apply a research approach relevant to present practice;
• produce graduates who can examine current developments in paramedic practice and their implications for paramedics and paramedic science.

Career Opportunities: Graduates will obtain additional skills, knowledge and personal attributes necessary to further employment in the emergency ambulance service. In addition, the qualification allows opportunities for those interested in pursuing post-graduate studies in areas such as medicine.

Course Duration: To be advised.

Admission Requirements: To qualify for admission to the course, applicants must:
• have an Associate Diploma of Health Science (Ambulance Officer), Diploma of Health Science (Paramedic), or equivalent; or
• be eligible for registration as a paramedic by the relevant body within the applicant’s state or country of residence; and
• have a minimum of one-year post-qualification experience in the emergency response ambulance industry or equivalent.

Course Structure: The course is offered over one year on a full-time basis or part-time equivalent, as demand requires. The course from 2009 onwards is offered on a full-time basis or part-time equivalent and is conducted on campus and via distance education depending upon the units chosen. Students are required to successfully complete eight (8) units of study (a total of 96 credit points), which must include seven core units and at least one elective unit, in order to meet graduation requirements. Students are encouraged to contact the Course Coordinator, Sue Eastcott, prior to selection of core and elective units. Some units may be available in either semester.

Pre-2007
Year One
Semester One
HFB3111  PROFESSIONAL BASIS OF PARAMEDIC PRACTICE 1 12
HFB3222  INTEGRATION OF PARAMEDIC PRACTICE 2 12
HFB3301  ISSUES IN PREHOSPITAL HEALTH SERVICE DELIVERY 12
HFB3401  PREHOSPITAL ETHICAL AND LEGAL ISSUES 12
Semester Two
HFB3122  PROFESSIONAL BASIS OF PARAMEDIC PRACTICE 2 12
HFB3211  INTEGRATION OF PARAMEDIC PRACTICE 1 12
HFB3501  RESEARCH IN PARAMEDIC PRACTICE 12
Elective x 12 credit points

General Electives
Student may choose an elective from any other higher education course offered by the University, subject to the approval of the Course Co-ordinator. Elective contact hours may be greater than three contact hours.

Post-2007
Year 1
Semester One
HFB3121  ADVANCED PARAMEDIC PRACTICE 1 12
HFB3123  ADVANCED PHARMACOLOGY 12
HFB3124  PRACTITIONER HEALTH 3 12
HFB3125  RESEARCH IN PARAMEDIC PRACTICE 12
Year 1
Semester Two
HFB3226  MAJOR INCIDENTS 12
HFB3227  PARAMEDIC EVIDENCE BASED HEALTH CARE 12
HFB3228  ADVANCED PARAMEDIC PRACTICE 2 12
HFB3229  PARAMEDIC PRACTICUM 12
FACULTY OF HEALTH, ENGINEERING AND SCIENCE

Course Code: HBPX

Campus: St Albans, CLINICAL PLACEMENTS Clinical placements operate on a year-round basis. Paramedic Science students will be required to attend clinical placements on a rotation basis, including outside of semester hours, to maintain a public service and provide continuity of clinical care.

Course Objectives: HBPX Bachelor of Health Science (Paramedic) is a pre-service training degree. The overall goal of the degree is to produce paramedic science graduates who can provide competent, efficient and compassionate clinical care at a basic entry level in the paramedic professional.

The aims of this course are to produce graduates who can:

- identify, evaluate and manage the physical, psychological and social needs of patients and members of the community undergoing paramedic assessment, treatment and transport, and apply problem solving skills when planning and implementing out-of-hospital care;
- perform paramedic skills and techniques within paramedic protocols and apply paramedic knowledge necessary for safe, efficient and effective practice within paramedic environments;
- interpret the paramedic needs of patients and members of the community within a holistic framework and apply an integrated holistic approach in paramedic practice;
- perform effectively and safely as an independent person and as a member of a health care team in paramedic environments;
- be sensitive to contemporary issues within socially and culturally diverse communities and predict and respond effectively to such issues when providing paramedic practice;
- examine current research and developments in paramedic practice and evaluate their implications for paramedics and the profession.

Career Opportunities: Graduates should have obtained the necessary clinical practice skills, knowledge and personal attributes necessary for employment as emergency paramedics. The skills, knowledge and attributes should provide graduates with a competitive advantage for selection and promotion in the emergency paramedic career pathways. Graduates are eligible to apply for membership of the Australian College of Ambulance Professionals (ACAP).

Course Duration: To be advised.

Admission Requirements: To qualify for admission to the course applicants must normally have successfully completed the Victoria Certificate of Education (VCE), Units 3 and 4 and a study score of at least 20 in English, or equivalent. Preference will be given to applicants who have successfully completed biology, physics or mathematics.

Applicants who do not meet the normal admission requirements but who possess appropriate educational qualifications, work or life experiences which would enable them to successfully undertake the course, will be considered for admission.

Students enrolled in the Bachelor of Health Science degree will be required to undergo a Victoria Police Check, a medical check and a physical capacity test before commencing placement units. Police checks need to be conducted annually throughout the program. Prospective and continuing students should be aware that not passing relevant police checks may restrict access to clinical placements necessary for graduation.

Course Structure: This course is usually delivered via a three (3) year full-time on-campus mode. However in 2009 only, third year students will be able to complete the third year of their degree in on-campus and online modes.

Year 1

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<th>Credit Points</th>
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<td>HFB1113</td>
<td>PRE-HOSPITAL ETHICAL AND LEGAL ISSUES</td>
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<td>HFB1111</td>
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**BACHELOR OF HEALTH SCIENCE (DERMAL THERAPIES)**

*Course Code*: HBTD

*Campus*: Werribee, City Flinders, Sunbury

*Course Objectives*: The area of dermal therapies, although relatively new, is expanding at a considerable rate. Recent global and western trends indicate that the beauty and dermal therapies areas are second only to the areas of hospitality and foods. Not only is there an increasing demand for services, but an increasing demand by industry, including from recent VU graduates, to improve the quality and quantity of trained graduates in the field. In addition, the interdisciplinary links amongst dermal therapists and those in the established basic sciences and health disciplines are strengthening sufficiently that the number of research publications in refereed journals in dermal therapies is also increasing. All these factors will ensure that dermal therapies will continue to grow as a professional field of its own right. The course in existence was originally developed about nine years ago. Over the years, technological advances in equipment and chemical products have been extensive and consumer demand (from an increasingly articulate client base for both services and training) is on the increase.

*Course Duration*: To be advised.

*Admission Requirements*: Entry requirements will be as per the requirements of the Diploma of Beauty Therapy International students and others required to undertake the course, will be considered for admission. In addition to satisfying the English language requirements, work or life experiences which would enable them to successfully complete the course are to be provided on an ongoing basis. These forms of treatments are increasing in popularity and so is the need for people to perform them.

A recent survey of past, current and prospective students found that approximately 94% want to complete this course to perform injectable treatments. All the advanced treatments listed in this course are non-permanent, therefore these treatments need to be provided on an ongoing basis. These forms of treatments are increasing in popularity and so is the need for people to perform them.

Secondly, the course will provide a clear pathway into further postgraduate study for those wishing to undertake research degrees at Masters or PhD levels in the area.

*Semester 1*

- HHD5135, HHD5145, HHD5155, HHD5165

*Semester 2*

- HHD5235, HHD5245, HHD5255, HHD5265

*Course Duration*: To be advised.

*Admission Requirements*: To qualify for admission to the course, an applicant must have successfully completed a course of study at year 12 or equivalent. Year 12 Prerequisites: Units 3 and 4 - study score of at least 20 in English (any). Selection Mode: Current Year 12 applicants: Equivalent National Tertiary Entrance Rank (ENTER) and two-stage process with a middle-band of approximately 20%. Non-current year 12 applicants: ENTER and/or academic record*. Middle-band consideration is given to performance in the full range of VCE studies undertaken.* Applicants who have not completed Year 12 but who possess appropriate educational qualifications, work or life experiences which would enable them to successfully undertake the course, will be considered for admission. In addition to satisfying the entry requirements for Australian resident students or demonstrating equivalence, overseas students must provide evidence of proficiency in the English language: International English Language Testing System - overall score of 6 and no individual band score less than 6.0.
Course Structure: Semester 1

- HHD5135  SPECIALISED DERMAL ANATOMY AND PHYSIOLOGY 12
- HHD5145  ADVANCED DERMAL APPLICATIONS 1 12
- HHD5155  PROFESSIONAL DERMAL ISSUES 1 12
- HHD5165  ADVANCED CLINICAL PRACTICE 1 12

Semester 2

- HHD5235  DERMAL PHARMACOLOGY 12
- HHD5245  ADVANCED DERMAL APPLICATIONS 2 12
- HHD5255  PROFESSIONAL DERMAL ISSUES 2 12
- HHD5265  ADVANCED CLINICAL PRACTICE 2 12

GRADUATE DIPLOMA IN EMERGENCY MANAGEMENT

Course Code: HGMT
Campus: On-line

Course Objectives: Focuses on key areas of disaster/emergency management and is delivered via online distance and flexible learning. Provides students with knowledge of the principles of emergency/disaster planning, preparedness, response and recovery. Graduates develop problem-solving attributes in emergency management, interoperability and communication in the event of a disaster/emergency situation, and working as a professional in the field.

The course introduces students to the challenging and diverse field of emergency management. The focus will be on eight key areas of disaster / emergency management and will be delivered via online distance and flexible learning. The aim of the course is to provide the student with knowledge of principles of emergency / disaster planning, preparedness, response and recovery. The course also aims to develop the graduate attributes of problem solving in the context of emergency management, interoperability and communication in the event of a disaster / emergency situation and working as a professional in the field of emergency management.

Career Opportunities: Emergency manager.

Course Duration: To be advised.

Admission Requirements: An appropriate undergraduate qualification or equivalent including experience in an Emergency Agency (e.g. Police, Fire, Ambulance, Health, Defence), Volunteer Organization (e.g. SES, Red Cross, St John Ambulance Service), Local / State / Commonwealth Government Department or Journalism.

Course Structure: This course is offered over two years part time or one year full time by negotiation with the course coordinator. The Graduate Certificate in Emergency Management is an exit point from the Graduate Diploma in Emergency Management.

Requirements for the Graduate Certificate in Emergency Management include the successful completion of any four of the following units:

Year One

Semester 1

- HHP5101  FUNDAMENTALS OF EMERGENCY MANAGEMENT 12
- HHP5102  DISASTER PLANNING AND PREVENTION 12
- HHP5103  DISASTER PREPAREDNESS 12
- HHP5104  DISASTER RESPONSE 12

Semester 2

- HHP5205  SPECIALIST RESPONSE IN DISASTERS 12
- HHP5206  DISASTER RECOVERY 12

HHP5207  LOGISTICS & SECURITY 12
HHP5208  DISASTER RESEARCH 12

MASTER OF HEALTH SCIENCE BY COURSEWORK

Course Code: HMHM
Campus: City Flinders, St Albans
Course Objectives: (For continuing students only)

This course will appeal to health practitioners from a variety of disciplines who have a desire to further studies via a minor thesis in their particular area of practice. These areas may include:

- Ambulance Services;
- Biomechanics and Exercise Physiology;
- Biomedical Sciences;
- Clinical Education;
- Community Health;
- Cultural Issues in Health;
- Dermal Therapies;
- Ecology and Environmental Management;
- Emergency Management;
- Environmental Sciences;
- Health Sciences;
- Mental Health;
- Nutritional Therapies;
- Occupational Health & Safety;
- Osteopathic Medicine;
- Paramedic Sciences;
- Sociology of Health;
- Women’s Health.

The aims of the course are:

- provide opportunities for students to extend their knowledge and enable ongoing critical analysis of primary health care;
- encourage students' further investigation and reflection in a specific area of professional interest; and
- enhance students’ ability to apply research knowledge in a collegiate environment.

Course Duration: 1 year

Admission Requirements: To qualify for admission to the course applicants must have successfully completed, at an average grade level of second class honours (H2), a Graduate Diploma in Health Sciences, or equivalent, as approved by the School of Biomedical and Health Sciences. International and other students required to demonstrate a basic level of English proficiency are required to have an IELTS of at least 6.5 overall. Some students may be required to undertake additional studies relevant to their field of study concurrent with their course.
Course Structure: Semester 1

Full-time
HFR0001  ADVANCED QUANTITATIVE RESEARCH METHODS 16
or
HFR0002  ADVANCED QUALITATIVE RESEARCH METHODS 16
HHT1127  MINOR THESIS - FULLTIME 32

Semester 2
HHT1137  MINOR THESIS - FULLTIME 48

Part-time
HFR0001  ADVANCED QUANTITATIVE RESEARCH METHODS 16
or
HFR0002  ADVANCED QUALITATIVE RESEARCH METHODS 16
and
HHT1147  MINOR THESIS - PART-TIME 8
HHT1157  MINOR THESIS (PART-TIME) 24
HHT1158  MINOR THESIS PART-TIME 24
HHT1159  MINOR THESIS E PART-TIME 24

MASTER OF HEALTH SCIENCE (OSTEOPATHY)
Course Code: HMOS
Campus: City Flinders

Course Objectives: The course equips graduates with the diagnostic skills required by primary health-care practitioners, the ability to assess the health status of the patient, including physical, socio-economic and psychological aspects, and the ability to formulate and prescribe a suitable and safe treatment program. Graduates can apply for registration as osteopaths in Victoria. The course also has the support of the Australian College of Physical Medicine.

The aims of this course are to equip graduates with:
- the diagnostic skills required by a primary health care practitioner;
- the ability to assess the health status of the patient, including physical, socio-economic and psychological aspects and refer appropriately;
- the ability to formulate and prescribe a suitable and safe treatment program;
- skills in a full range of osteopathic techniques;
- an awareness of the application of osteopathic principles relevant to patient management;
- the ability to interact with other health care providers and advisers for the benefit of the patient, including an awareness of the need to gain informed consent;
- communication skills related to the patient and other persons, to maintain inter-professional co-operation and respect;
- an awareness of the cost effectiveness of osteopathic treatment;
- an awareness of the support systems that are available and an ability to take part in a multi-practitioner research program;
- an awareness of the need for continuing self education;
- clinical proficiency and an ability to manage all aspects of osteopathic patient care; and
- an awareness of their professional and personal responsibilities and an ability to effectively organise and manage their working environment.

Course Duration: To be advised.

Admission Requirements: To qualify for admission to the course applicants must have satisfactorily completed the HBOS Bachelor of Science - Clinical Sciences, or equivalent and have successfully completed the selection interview.

Students will be required to undergo a Victoria Police check before commencing clinical placement units. Police checks need to be conducted annually throughout the programme. Prospective and continuing students should be aware that not passing relevant police checks may restrict access to clinical placements necessary for graduation.

At the commencement of the course students must have completed the Level 2 First Aid Certificate update.

Course Structure: The course is offered over two years on a full-time basis.

Year One
Semester One
HHD4185  CLINICAL DIAGNOSIS AND MANAGEMENT 5 12
HHL4181  RESEARCH 1 12
HHO4187  OSTEOPATHIC SCIENCE 7 8
HHS4183  PSYCHOLOGY AND SOCIAL SCIENCES 3 8
HHU4187  CLINICAL PRACTICUM 7 8
Semester Two
HHD4286  CLINICAL DIAGNOSIS AND MANAGEMENT 6 12
HHL4282  RESEARCH 2 12
HHO4288  OSTEOPATHIC SCIENCE 8 8
HHU4288  CLINICAL PRACTICUM 8 8
Year Two
Semester One
HHDS187  CLINICAL DIAGNOSIS AND MANAGEMENT 7 12
HHLS183  RESEARCH 3 12
HHOS189  OSTEOPATHIC SCIENCE 9 12
HHUS189  CLINICAL PRACTICUM 9 12
Semester Two
HHDS288  CLINICAL DIAGNOSIS AND MANAGEMENT 8 12
HHLS284  RESEARCH 4 12
HHOS280  OSTEOPATHIC SCIENCE 10 12
HHUS280  CLINICAL PRACTICUM 10 12

Clinical Practicum

Clinical practicum is direct student/patient contact supervised by registered osteopaths and medical practitioners. In order to register as an osteopath, students must complete the minimum attendance requirements for clinical units over the full five years of the combined Bachelor of Science-Clinical Sciences and Master of Health Science-Osteopathy courses. This will be achieved cumulatively by an increasing commitment of time to clinically based learning as students progress through the course and their clinical skills increase.

As the teaching clinics are required to operate 50 weeks per year, in order to maintain a public service and provide essential continuity of patient care, students will be expected to supplement any deficit in clinical practicum hours outside semester hours. The arrangement of clinical hours will be flexible and may vary from year to year dependent upon resources, patient availability and student development.
During the clinical practicum students will develop and enhance the following skills within the supervised clinical setting: interpersonal and communication skills; history taking; general observation; clinical methods; general medical and osteopathic examination; data analysis and interpretation; pathological diagnosis; radiological diagnosis; special investigations; osteopathic treatment and management; and professional behaviour and ethics.

School of Health Sciences/Osteopathy Website: http://www.vu.edu.au/Faculties/Health_Engineering_and_Science/Schools/Health_Sciences/Osteopathy

Professional Recognition
Registration and regulation of osteopaths is a function of State Registration Boards in a similar way to the regulation of other health professions such as medicine and dentistry. Graduates of this course will be eligible to apply to be registered as osteopaths in Victoria. The course also has the support of the Australian College of Physical Medicine.

MASTER OF HEALTH SCIENCE (BY RESEARCH)
Course Code: HRNS

Campus: Werribee, City Flinders, Sunbury

Course Objectives: The School of Health Sciences offers the Master of Health Science (by Research). Staff are able to supervise research projects in a broad range of health and related areas, some of which are listed below. It is suggested that applicants explore their research interests with the Course Co-ordinator and contact with appropriate staff will be facilitated. A thesis on an approved topic will be required.

Areas of Specialisation: • Acupuncture; • Ambulance Services; • Chinese Herbal Medicine; • Clinical Practice; • Complementary Therapies; • Cultural Issues and Health; • Emergency Services; • Health Administration; • Health Counselling; • Health Education; • Natural Medicine; • Osteopathic Medicine; • Rehabilitation; • Traditional Chinese Medicine; • Western Herbal Medicine; • Women's Health.

The aim of the course is to provide students with a basic grounding in the principles and practice relevant to business in today's corporate world. It is anticipated that students will transfer into a prescribed business degree program thus deepening knowledge in particular areas and developing a specialist skill base.

Course Duration: To be advised.

Admission Requirements: To qualify for admission to the Master of Health Science (by Research) applicants must hold a degree in health science, or a related area, or equivalent, as approved by the School of Health Sciences.

Degree Requirements
The research thesis must be original work conducted under the supervision of the student advisor/s and with the approval of the Postgraduate Studies Committee of the University. The thesis of the candidate will be examined externally by examiners of high academic standing in the area of the candidate's thesis topic. Coursework may be required of candidates to further enhance the knowledge of a specific topic relevant to the field of study. Such coursework would run concurrent to the research.

Course Structure: The course normally requires two years of full-time study or part-time equivalent.

BACHELOR OF HEALTH SCIENCE (PAMEMIC)
Course Code: HFB

Campus: St Albans

Course Objectives: (For continuing students only)
The aims of this course are to produce graduates who can: identify, evaluate and manage the physical, psychological and social needs of patients and members of the community undergoing paramedic assessment, treatment and transport, and apply problem solving skills when planning and implementing out-of-hospital care; perform paramedic skills and techniques within paramedic protocols and apply paramedic knowledge necessary for safe, efficient and effective practice within paramedic environments; interpret the paramedic needs of patients and members of the community within a holistic framework and apply an integrated holistic approach in paramedic practice; perform effectively and safely as an independent person and as a member of a health care team in paramedic environments; be sensitive to contemporary issues within socially and culturally diverse communities and predict and respond effectively to such issues when providing paramedic practice; examine current research and developments in paramedic practice and evaluate their implications for paramedics and the profession.

Course Duration: To be advised.

Admission Requirements: To qualify for admission to the course applicants must normally have successfully completed the Victoria Certificate of Education (VCE), with Units 3 and 4 and a study score of at least 20 in English, or equivalent. Preference will be given to applicants who have successfully completed biology, physics or mathematics.

Applicants who do not meet the normal admission requirements but who possess appropriate educational qualifications, work or life experiences which would enable them to successfully undertake the course, will be considered for admission. Students enrolled in the Bachelor of Health Science degree will be required to produce a current Victorian drivers’ licence, and undergo a Victorian Police Check, a medical check and a physical capacity test before commencing placement subjects. Police checks need to be conducted annually throughout the program. Prospective and continuing students should be aware that not passing relevant police checks may restrict access to clinical placements necessary for graduation.

Course Structure: The course is offered on a full-time basis or part-time equivalent. Clinical placements will be facilitated to suit individual needs of international students.

Year Three
Semester One
HFB3111  PROFessional BASIS OF PAMEMIC PRACTICE 1 12
HFB3301  ISSUES IN PREHOSPITAL HEALTH SERVICE DELIVERY 12
HFB3401  PREHOSPITAL ETHICAL AND LEGAL ISSUES 12
HFB3800  PAMEMIC PROFESSIONAL WRITING 12

Semester Two
HFB3122  PROFessional BASIS OF PAMEMIC PRACTICE 2 12
HFB3211  INTEGRATION OF PAMEMIC PRACTICE 1 12
HFB3501  RESEARCH IN PAMEMIC PRACTICE 12
HFB3700  PAMEMIC INSTRUCTION AND MENTORING 12

General Electives
Students may choose electives from any other higher education courses offered by the University, subjects to the approval of the Course Co-ordinator. Elective contact hours may be greater than three contact hours.

Course Regulations
The following should be read in conjunction with the Faculty Regulations detailed earlier in this handbook, and the University Statutes and Regulations.

Unsatisfactory Progress
Students may be asked to show cause why they should not be excluded from the course if they fail to complete the course within seven calendar years on a full-time basis or part-time equivalent.

Graduate Requirements
In order to be awarded the degree Bachelor of Health Science-Paramedic, students must attain proficiency standard as stipulated by local industry guidelines in all paramedic practical assessments and must obtain an Upgraded Pass in all practical subjects. In order to be enrolled in Year Three, students must have successfully completed Years One and Two, or equivalent.
Career Opportunities

Students will obtain skills, knowledge and personal attributes necessary for employment in an ambulance service. The skills, knowledge and attributes should also provide graduates with a competitive advantage for selection and promotion in the paramedicine career pathways.

Professional Recognition

All graduates are eligible to apply for membership of the Australian college of Ambulance Professionals.

**BACHELOR OF SCIENCE (BIOMEDICAL SCIENCES)**

*Course Code:* SBBS

*Campus:* St Albans

*Course Objectives:* This degree provides students with an in-depth knowledge of human physiology combined with skills in critical analysis and communication. Science studies, such as functional anatomy, nutrition, pathophysiology, immunology and clinical genetics, can be combined with electives.

The Bachelor of Science in Biomedical Sciences is designed to provide professional training in the application of science to human biology in the market place. The course aims to produce highly flexible but well-trained graduates who will be adequately equipped to adapt to a changing environment. Four different streams are available for this degree in Biomedical Sciences including wellness management, science media and communications, marketing of biomedical products, and medical research/clinical sciences. Although, students are encouraged to follow one of these streams, they are able to choose from the entire range of subjects offered in the Biomedical Sciences degree. The overall objectives of the degree in Biomedical Sciences are to provide graduates with an excellent knowledge of human physiological functions together with skills in critical analysis and with highly developed communication skills. Complementary knowledge will be developed in a wide range of selected disciplines including psychology, human development, management, marketing, visual and audiovisual communications and a language. The Wellness Management stream is designed to produce graduates with an understanding of human function. Graduates will be eligible for employment as Wellness consultants either in private practice or within government agencies, large companies or corporations. The Science, Media and Communications specialisation is more specifically designed to produce graduates who would be knowledgeable in human biology and biomedical sciences. Graduates would have a broad education, being highly literate and articulate in specialised areas such as an Asian Language, Professional Writing, and Communications. Graduates in the Management and Marketing of Biomedical Products stream will have an in-depth knowledge of basic human biological function combined with specialised skills in either human resource management or in marketing. This combination of skills appears to be unique in Australia as there seems to be no other course in Australia with this combination of subjects. The Medical Research/Clinical Sciences stream will provide students with a range of skills appropriate to leading edge medical research. This degree offers a range of subjects appropriate for further postgraduate study in medical and paramedical fields. Duration of the course The course will be equivalent to three years of full-time study for students entering the course at Year 1 or part-time equivalent.

*Course Duration:* To be advised.

*Admission Requirements:* You need to have an aptitude for science. VCE Units 3 and 4 English with a study score of at least 20 in English. Middle Band Selection Completing Biology and/or Chemistry can lead to an ENTER 3.5 points higher per study.

*Course Structure:* The course will comprise of two 12 week semesters or 24 weeks per year for three years. The course outline together with the contact hours per week is contained in the following pages. First year subjects listed are currently running at the St Albans Campus.

Electives may be taken from the wide range of science and general subjects listed below. Other suitable electives (not listed below) may also be chosen subject to the approval of the course co-ordinator. If general electives are selected, students are encouraged to take a four-six semester sequence in one of the following areas including Human Resource Management, Marketing, Communications, Psychology, Professional Writing or a language other than English. Electives will be offered subject to adequate demand.

Students enrolled in the Biomedical Science course Degree must take a minimum of 60 per cent of their total credit points from subjects offered by the School of Biomedical Sciences. In addition, no more than 40 credit points from general elective subjects shall be at first year level, and at least one elective shall be commensurate with the year of the student’s course.

**Year 1**

*Semester 1*

<table>
<thead>
<tr>
<th>Code</th>
<th>Subject</th>
<th>Credits</th>
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<tr>
<td>RBM1100</td>
<td>FUNCTIONAL ANATOMY OF THE TRUNK</td>
<td>12</td>
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<tr>
<td>RBM1501</td>
<td>FOUNDATIONS IN BIOMEDICAL SCIENCE A</td>
<td>12</td>
</tr>
<tr>
<td>RBM1518</td>
<td>HUMAN PHYSIOLOGY 1</td>
<td>12</td>
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<tr>
<td>RCS1110</td>
<td>CHEMISTRY FOR BIOLOGICAL SCIENCES A</td>
<td>12</td>
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<tr>
<td>OR</td>
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<tr>
<td>APP1012</td>
<td>PSYCHOLOGY 1A</td>
<td>12</td>
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<td>OR</td>
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*Semester 2*

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<tr>
<td>RBM1502</td>
<td>FOUNDATIONS IN BIOMEDICAL SCIENCE B</td>
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<tr>
<td>RBM1200</td>
<td>FUNCTIONAL ANATOMY OF THE LIMBS</td>
<td>12</td>
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<tr>
<td>RBM1528</td>
<td>HUMAN PHYSIOLOGY 2</td>
<td>12</td>
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<tr>
<td>RCS1120</td>
<td>CHEMISTRY FOR BIOLOGICAL SCIENCES B</td>
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<td>OR</td>
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<tr>
<td>APP1013</td>
<td>PSYCHOLOGY 1B</td>
<td>12</td>
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<td>OR</td>
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**Year 2**

*Semester 1*

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<tr>
<td>RBM2260</td>
<td>DIET AND NUTRITION</td>
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<tr>
<td>RBM2530</td>
<td>PATHOPHYSIOLOGY 1</td>
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Two of the Following OR other Science, Psychology, Communications, Management and Marketing electives

<table>
<thead>
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<th>Subject</th>
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<tr>
<td>RBM2100</td>
<td>REHABILITATION ANATOMY</td>
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<tr>
<td>RBM2365</td>
<td>MEDICAL MICROBIOLOGY</td>
<td>12</td>
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<td>RBM2560</td>
<td>MEDICAL BIOCHEMISTRY</td>
<td>12</td>
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<tr>
<td>RBM2610</td>
<td>BIOMEDICAL SCIENCES AND SOCIETY</td>
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*Semester 2*

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<tr>
<td>RBM2540</td>
<td>PATHOPHYSIOLOGY 2</td>
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<tr>
<td>RBM2800</td>
<td>CARDIORESPIRATORY AND RENAL PHYSIOLOGY</td>
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Two of the following OR other Science, Psychology, Communications, Management and Marketing electives

<table>
<thead>
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<th>Subject</th>
<th>Credits</th>
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<tr>
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<td>FUNCTIONAL ANATOMY OF THE HEAD AND BACK</td>
<td>12</td>
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<tr>
<td>RBM3610</td>
<td>BIOMEDICAL SCIENCE, ETHICS AND VALUES</td>
<td>12</td>
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<tr>
<td>RBF2530</td>
<td>CELL BIOLOGY</td>
<td>12</td>
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**SCHOOL OF BIOMEDICAL AND HEALTH SCIENCES**

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Choose at least three of following core Units of Study below per semester.

Year 3
Semester 1

- RBM3264  ADVANCED NERVE AND MUSCLE PHYSIOLOGY  12
- RBM3550  GROWTH AND EARLY DEVELOPMENT  12
- RBM3590  ADVANCED EXPERIMENTAL TECHNIQUES  12
- RBM3720  IMMUNOLOGY  12
- RBM3810  WELLNESS 1  12

Year 3
Semester 2

- RBM3640  ADVANCED NEUROSCIENCES  12
- RBM3560  GROWTH, DEVELOPMENT AND AGING  12
- RBM3660  HUMAN DEVELOPMENTAL AND CLINICAL GENETICS  12
- RBM3800  PHARMACOLOGY  12
- RBM3820  WELLNESS 2  12
- RBM3650  ADVANCED REPRODUCTION AND DEVELOPMENT  12
- RBM3910  PROJECT  12
- RBM3960  NUTRITIONAL FRONTIERS  12

Electives

- RBM2201  CONSERVATION GENETICS  12
- RBM3101  GEOGRAPHIC INFORMATION SYSTEMS (GIS) FOR CONSERVATION & HEALTH  12
- RBM3650  ADVANCED REPRODUCTION AND DEVELOPMENT  12
- RBM3960  NUTRITIONAL FRONTIERS  12

Other electives from semesters 1 or 2 with 12 credit points

BACHELOR OF SCIENCE IN BIOTECHNOLOGY
Course Code: SBBY

Campus: Werribee

Course Objectives: (For continuing students only)

The biotechnology degree prepares students for exciting careers in cutting edge science. This program provides in depth education in many areas of modern biology including: genetic engineering, medical research, cloning, forensics, environmental biotechnology, microbiology and biochemistry. There is a strong emphasis on the development of laboratory-based skills for which the school is equipped with state-of-the-art facilities.

The biotechnology degree prepares students for exciting careers in cutting edge science. This program provides in depth education in many areas of modern biology including: genetic engineering, medical research, cloning, forensics, environmental biotechnology, microbiology and biochemistry. There is a strong emphasis on the development of laboratory-based skills for which the school is equipped with state-of-the-art facilities.

Course Duration: To be advised.

Admission Requirements: The minimum entry requirement for persons under 21 years of age on 1 January 2006 is the satisfactory completion of a Year 12 course of study approved by the Victorian Curriculum and assessment Board (VCAB), or an equivalent program approved by Victoria University for entry. Prerequisites are Units 3 and 4 in the following subjects: English, and Mathematics (any). There is also provision for mature age entry and entry as a disadvantaged person. Mature age provisions apply to those persons aged 21 and over as at 1 January for the year in which they are applying. Entry into the degree can also be attained through TAFE articulation.

Course Structure: The Bachelor of Science program requires the equivalent of three years full-time study.

Year 1

- ACE1913  PROFESSIONAL COMMUNICATION  12
- RBF1310  BIOLOGY 1  12
- RBF1320  BIOLOGY 2  12
- RCS1601  CHEMISTRY 1A  12
- RCS1602  CHEMISTRY 1B  12
- RMS1000  BIOTECHNOLOGY PROFESS  12
- RMA1110  MATHEMATICS FOR THE BIOLOGICAL AND CHEMICAL SCIENCES  12
- RMA1120  STATISTICS FOR THE BIOLOGICAL AND CHEMICAL SCIENCES  12

Year 2

- RBF2300  MICROBIOLOGY 1  12
- RBF2310  MICROBIOLOGY 2  12
- RBF2330  CELL BIOLOGY  12
- RBF2390  MOLECULAR GENETICS  12
- RBF2520  BIOCHEMISTRY 1  12
- RBF2530  BIOCHEMISTRY 2  12

Elective (Semester One) 1  12
Elective (semester 2)  1  12

Year 3

- RMS3010  BIOPROCESSING APPLICATIONS  12
- RMS3020  GENOMICS, PROTEOMICS AND BIOINFORMATICS  12
- RMS3030  GENETIC ENGINEERING  12
- RMS3000  BIOPROCESSING TECHNOLOGY  12
- RMS3050  ADVANCED MEDICAL MICROBIOLOGY  6
- RMS3060  MICROBIAL TECHNOLOGY AND CELL CULTURE  6
- RMS3040  PROJECT 1 - BIOTECHNOLOGY  12
- RMS3045  PROJECT 2 - BIOTECHNOLOGY  12
- RMS3113  COMPARATIVE IMMUNOBIOLOGY  12

Other Course Specific Notes
1. The second year electives can be units chosen from any course within the university subject to the approval of the course co-ordinator.
2. The two six credit point units will both be taken in semester 2.

BACHELOR OF APPLIED SCIENCE (CHEMISTRY)
Course Code: SBCP

Campus: Werribee

Course Objectives: (For continuing students only)

This course provides a sound background in the fundamentals of chemistry and leads to a professional qualification which meets the membership requirements of the Royal Australian Chemical Institute. The course has major emphasis on analytical and organic chemistry and includes significant studies in other areas.

This course provides a sound background in the fundamentals of chemistry and leads
to a professional qualification which meets the membership requirements of the Royal Australian Chemical Institute. The course has major emphasis on analytical and organic chemistry and includes significant studies in other areas.

**Course Duration:** To be advised.

**Admission Requirements:** Applicants should have successfully completed VCE or another Year 12 qualification with studies in English and Mathematics. Applicants with other qualifications should seek advice from the Faculty of Health, Engineering and Science. An aptitude for science should be evident. Potential students for the Bachelor of Applied Science in Chemistry should apply directly to the University.

**Course Structure:** This course is specifically designed for part-time study by students employed in chemical and related industries. The course recognises that students in employment develop a wide range of on-the-job skills and consequently it only includes a limited number of subjects in areas other than chemistry. The course is organised to enable completion in six years but may be completed in a shorter time if work commitments permit. Employment in a chemical or related industry for a minimum of three years is a co-requisite and is required for graduation.

**Year 1**

**Semester One**

<table>
<thead>
<tr>
<th>Course Code</th>
<th>Course Title</th>
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<tr>
<td>RCS1008</td>
<td>INDUSTRIAL EXPERIENCE 1A</td>
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<td>RCS1601</td>
<td>CHEMISTRY 1A</td>
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<tr>
<td>RMA1110</td>
<td>MATHEMATICS FOR THE BIOLOGICAL AND CHEMICAL SCIENCES 1</td>
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**Semester Two**

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**Year 2**

**Semester One**

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**Electives to 12 credit points in Year 2, Semester 1.**

**Semester Two**

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<td>RMA2120</td>
<td>MATHEMATICS FOR THE BIOLOGICAL AND CHEMICAL SCIENCES 2</td>
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**Year 3**

**Semester One**

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<td>RCS3000</td>
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<td>RCS3601</td>
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<td>RCS3003</td>
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<td>RMA3071</td>
<td>INTRODUCTION TO COMPUTER UTILISATION</td>
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**Semester Two**

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<td>RCS3602</td>
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<tr>
<td>RCS3607</td>
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<tr>
<td>RCS3608</td>
<td>POLYMER TECHNOLOGY</td>
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**Electives to 18cps in Year 3 Semester 2.**

**BACHELOR OF SCIENCE (ECOLOGY AND SUSTAINABILITY)**

**Course Code:** SBES

**Campus:** Werribee, City Flinders, Sunbury

**Course Objectives:** This degree teaches students skills to perform a wide range of ecological and environmental science activities. It provides an awareness of environmental issues and community studies. Students also learn skills to communicate their ecological knowledge. The course is practical and flexible, allowing a mix of in-depth studies and specialisations with novel combinations of units of study across diverse disciplines not usually covered in science courses.

This course provides the flexible combinations of professional education and technical training that are required to develop the practical solutions necessary to achieve sustainable management of the Australian environment. There is a strong emphasis on hands-on skills, including building links across scientific, social and business sectors environmental analysis, effective communication and project management.

The course structure is based on a limited number of core subjects which provide a solid foundation to understanding of the biology, ecology and sustainable management of the Australian landscape, supplemented by a wide range of electives drawn from the environmental engineering, business, tourism, community development and human bioscience disciplines.

Students can choose from electives according to the major streams in the course:  
- a) ecology and natural resource management (with specialisations in aquatic engineering and environmental engineering);
- b) ecology and community development;
- c) ecology and tourism/business;
- d) ecology and human bioscience/wellness.

These are suggested streams only, and students may select electives according to their desired academic and career pathway, subject to approval from the Course Co-ordinator.

The course teaches students the necessary skills to perform a wide range of activities in ecology and environmental science in addition to environmental issues and community studies, providing the skills for communicating their ecological knowledge to science professionals and the general community. The course structure is practically based and flexible, allowing a mix of in-depth studies and specialisations in novel combinations of subjects across a wide range of disciplines.

**Course Duration:** To be advised.

**Admission Requirements:** The minimum entry requirement for persons under 21 years of age on 1 January 2005 is the satisfactory completion of a Year 12 course of study approved by the Victorian Curriculum and Assessment Board (VCAB) or an equivalent program approved by Victoria University for entry. The minimum ENTER score for 2005 is 70. Prerequisites are Units 3 and 4 - a study score of at least 20 in English (any). There is also provision for mature age entry and entry as a disadvantaged person. Mature age provisions apply to those persons aged 21 years and over as at 1 January 2006.

**Course Structure:** The Bachelor of Science in Ecology and Sustainability program requires the equivalent of three years full-time study. A fourth year may be taken in the Honours program.

**Year 1, Semester 1**
ACE1911  COMMUNICATIONS FOR THE PROF SCIENTIST 1 12
RBF1310  BIOLOGY 1 12
RBF1150  GLOBAL ENVIRONMENTAL ISSUES 12
or
RCS1110  CHEMISTRY FOR BIOLOGICAL SCIENCES A 12
RMA1110  MATHEMATICS FOR THE BIOLOGICAL AND CHEMICAL SCIENCES 1 12
or elective

Year 1, Semester 2
ACE1912  COMMUNICATIONS FOR THE PROF SCIENTIST 2 12
RBF1320  BIOLOGY 2 12
RBF1160  AUSTRALIAN LANDSCAPES AND BIOTA 12
and/or
RCS1120  CHEMISTRY FOR BIOLOGICAL SCIENCES B 12
and/or
RMA1120  STATISTICS FOR THE BIOLOGICAL AND CHEMICAL SCIENCES 2 12
and/or elective

Year 2, Semester 1
RBF2610  FUNDAMENTALS OF ECOLOGY 12
RBF2640  AUSTRALIAN ANIMALS 12
and/or
RCS1120  CHEMISTRY FOR BIOLOGICAL SCIENCES B 12
and/or
RMA1120  STATISTICS FOR THE BIOLOGICAL AND CHEMICAL SCIENCES 2 12
and/or elective

Year 2, Semester 2
RBF2630  COMMUNITY AND ENVIRONMENT 12
RBF2620  AUSTRALIAN PLANTS 12
and/or
RCS1120  CHEMISTRY FOR BIOLOGICAL SCIENCES B 12
and/or
RMA1120  STATISTICS FOR THE BIOLOGICAL AND CHEMICAL SCIENCES 2 12
and/or elective

Prescribed and free electives 1, 2 24

Year 3, Semester 1
Minimum of four from list below plus up to four electives
RMA3101  GEOGRAPHIC INFORMATION SYSTEMS (GIS) FOR CONSERVATION & HEALTH 12

Year 3, Semester 2
RBF6330  INDUSTRY BASED TRAINING 12
RBF3660  INDIGENOUS SOCIETY AND ENVIRONMENTAL MANAGEMENT 12
RCS3411  ENVIRONMENTAL LEGISLATION 12
Electives 3

1. Students taking the Ecology and Human Bioscience/Wellness stream can take RBF1310 Biology 1 or RBF1510 Human Bioscience 1A.
2. Students enrolled in the Natural Resource Management stream would be advised to take RCS1110 Chemistry for Biological Sciences A and RCS1120 Chemistry for Biological Sciences B, as these Units of Study are prerequisites for some level 2 and 3 core units in that stream. Students in other streams would not be so advised.

Students enrolled in the Natural Resource Management stream would be required to take RMA1110 Mathematics for the Biological & Chemical Sciences 1 and RMA1120 Mathematics for the Biological & Chemical Sciences 2 if they lack VCE Mathematics, but could take an elective if they have VCE Mathematics. This is at the discretion of the Course Co-ordinator.

Students taking either of the Engineering specialisations within the Natural Resource Management stream should take RMA1110 Mathematics for the Biological & Chemical Sciences 1 and RMA1120 Mathematics for the Biological & Chemical Sciences 2 in the first year of study. All other students within the stream should take these units in their second year.

3. Prescribed and free electives are those listed below.

Electives
At least 6 electives are required to be taken over the course of the degree. Electives other than those listed below may be taken at the discretion of the Course Co-ordinator. The total credit points must be within the prescribed range and due consideration must be given for prerequisites.

Science electives may be chosen from any of the degree units offered by the Faculty of Health, Engineering and Science. Units from programs offered by other Faculties may also be selected as elective subjects, subject to the approval of the appropriate Faculty. Students should refer to the unit outlines listed within other Schools and Faculties for further information.

Students are advised to seek the assistance of academic staff when making their elective choice, as the judicious selection of electives can provide an opportunity to undertake a second major study alongside the primary degree specialization.

Prescribed Electives
Ecology and Natural Resource Management Stream
RCS1110  CHEMISTRY FOR BIOLOGICAL SCIENCES A 12
RMA1110  MATHEMATICS FOR THE BIOLOGICAL AND CHEMICAL SCIENCES 1 12
RCS1120  CHEMISTRY FOR BIOLOGICAL SCIENCES B 12
RMA1120  STATISTICS FOR THE BIOLOGICAL AND CHEMICAL SCIENCES 2 12
These Units of Study are recommended.
Aquatic Engineering and Environmental Engineering Specializations
It is possible to undertake a number of units in Aquatic Engineering and Environmental Engineering Specializations. Please discuss with the Course Coordinator prior to selection.
Ecology and community Development Stream
ASA1023  COMMUNITY DEVELOPMENT FROM THE LOCAL TO THE GLOBAL 12
ASA1024  APPLIED HUMAN RIGHTS 12
ASA2023  WORKING WITH ORGANISATIONS: PROBLEMS AND POSSIBILITIES 12
ASA2024  SOCIAL MOVEMENTS, SOCIAL ACTIONS 12
ASC3095  CONFLICT RESOLUTION IN GROUPS AND COMMUNITIES 12
Ecology and Tourism/Business Stream
BHO1190  INTRODUCTION TO TOURISM 12
BHO2286  NATURE BASED TOURISM 12
Students taking this stream should choose two electives from the following:
BACHELOR OF SCIENCE (MEDICAL FORENSIC AND ANALYTICAL CHEMISTRY)

Course Code: SBMF

Campus: Werribee

Course Objectives: (For continuing students only)

The course provides theoretical and practical training in medical, forensic and analytical chemistry. The design of the course has taken account of recent market research indicating that employers seek graduates with specific skills in analytical chemistry as applied to industrial, medical and forensic issues. Concomitant studies in Molecular Sciences, Biosciences, Communication, Mathematics and Computer Literacy give the graduate the employment skills that support the technical expertise. The course is designed to meet the professional membership requirements of The Royal Australian Chemical Institute (RACI). The course commences with a typical first year that exposes the student to a wide range of science disciplines. Second and third year have a core of subjects offering advanced studies in medical chemistry, forensic chemistry, analytical chemistry and organic chemistry. A number of molecular biology electives are available in second and third year for those students wishing to obtain expertise in this area and related medical and forensic fields or progress to further studies in molecular biology. In the final year chemical knowledge and applications are consolidated through appropriate choices of subjects and electives.

Course Duration: To be advised.

Admission Requirements: Admission will be based upon completion of VCE or equivalent Year 12 qualification. Prerequisites are Units 3 and 4 in English and Mathematics (any). Thus, in keeping with the intention of the University to operate an open access policy, the absence of prior studies in chemistry in particular, and science in general will not preclude admission to the proposed course. However, applicants who have successfully completed Chemistry and/or Specialist Mathematics and/or Physics will be deemed to have a TER of 3 percentage points higher for each study. Certain subjects passed in other courses at Victoria University or at other Institutions may be considered for advanced standing. Provision will be made for articulation from TAFE science programs with appropriate credit.

Course Structure: The course is offered on a full-time basis over three years or part-time equivalent. This course is also designed to allow mid-year entry.

Year 1

Semester One

ACE1913  PROFESSIONAL COMMUNICATION 12
RCS1601  CHEMISTRY 1A 12
RBM1540  PATHOPHYSIOLOGY 2 12
RMA1110  MATHEMATICS FOR THE BIOLOGICAL AND CHEMICAL SCIENCES 1 12

Semester Two

RBM2530  PATHOPHYSIOLOGY 1 12
RBM2540  PATHOPHYSIOLOGY 2 12
RBM2560  MEDICAL BIOCHEMISTRY 12
RBM2610  BIOMEDICAL SCIENCES AND SOCIETY 12
RBM3101  GEOGRAPHIC INFORMATION SYSTEMS (GIS) FOR CONSERVATION & HEALTH 12
RBM3810  WELLNESS 1 12
RBM3820  WELLNESS 2 12
RBF3530  ENVIRONMENTAL PHILOSOPHY 12
RBF3540  LEADERSHIP AND THE ENVIRONMENT 12

RBM2530  PATHOPHYSIOLOGY 1 12
RBM2540  PATHOPHYSIOLOGY 2 12
RBM2560  MEDICAL BIOCHEMISTRY 12
RBM2610  BIOMEDICAL SCIENCES AND SOCIETY 12
RBM3101  GEOGRAPHIC INFORMATION SYSTEMS (GIS) FOR CONSERVATION & HEALTH 12
RBM3810  WELLNESS 1 12
RBM3820  WELLNESS 2 12
RBF3530  ENVIRONMENTAL PHILOSOPHY 12
RBF3540  LEADERSHIP AND THE ENVIRONMENT 12

BACHelor of scienCe (mEDICAL fOREnSIC aND aNALYTICAL cHEMISTRY)

Course Code: SBMF

Campus: Werribee

Course Objectives: (For continuing students only)

The course provides theoretical and practical training in medical, forensic and analytical chemistry. The design of the course has taken account of recent market research indicating that employers seek graduates with specific skills in analytical chemistry as applied to industrial, medical and forensic issues. Concomitant studies in Molecular Sciences, Biosciences, Communication, Mathematics and Computer Literacy give the graduate the employment skills that support the technical expertise. The course is designed to meet the professional membership requirements of The Royal Australian Chemical Institute (RACI). The course commences with a typical first year that exposes the student to a wide range of science disciplines. Second and third year have a core of subjects offering advanced studies in medical chemistry, forensic chemistry, analytical chemistry and organic chemistry. A number of molecular biology electives are available in second and third year for those students wishing to obtain expertise in this area and related medical and forensic fields or progress to further studies in molecular biology. In the final year chemical knowledge and applications are consolidated through appropriate choices of subjects and electives.

Course Duration: To be advised.

Admission Requirements: Admission will be based upon completion of VCE or equivalent Year 12 qualification. Prerequisites are Units 3 and 4 in English and Mathematics (any). Thus, in keeping with the intention of the University to operate an open access policy, the absence of prior studies in chemistry in particular, and science in general will not preclude admission to the proposed course. However, applicants who have successfully completed Chemistry and/or Specialist Mathematics and/or Physics will be deemed to have a TER of 3 percentage points higher for each study. Certain subjects passed in other courses at Victoria University or at other Institutions may be considered for advanced standing. Provision will be made for articulation from TAFE science programs with appropriate credit.

Course Structure: The course is offered on a full-time basis over three years or part-time equivalent. This course is also designed to allow mid-year entry.

Year 1

Semester One

ACE1913  PROFESSIONAL COMMUNICATION 12
RCS1601  CHEMISTRY 1A 12
RBM1540  PATHOPHYSIOLOGY 2 12
RMA1110  MATHEMATICS FOR THE BIOLOGICAL AND CHEMICAL SCIENCES 1 12

Semester Two

RBM2530  PATHOPHYSIOLOGY 1 12
RBM2540  PATHOPHYSIOLOGY 2 12
RBM2560  MEDICAL BIOCHEMISTRY 12
RBM2610  BIOMEDICAL SCIENCES AND SOCIETY 12
RBM3101  GEOGRAPHIC INFORMATION SYSTEMS (GIS) FOR CONSERVATION & HEALTH 12
RBM3810  WELLNESS 1 12
RBM3820  WELLNESS 2 12
RBF3530  ENVIRONMENTAL PHILOSOPHY 12
RBF3540  LEADERSHIP AND THE ENVIRONMENT 12
BACHELOR OF SCIENCE (NUTRITION FOOD AND HEALTH SCIENCE)
Course Code: SBNH
Campus: Werribee

Course Objectives: (For continuing students only)
The Nutrition, Food and Health Science degree is designed to develop the knowledge and skills in the science of food, its safety and quality as required by today’s nutritionist’s and food scientists. Increasing consumer awareness and demands in regard to food related health issues and the increasingly important role of nutrition in the development and evaluation of food products has generated a rapidly growing need for graduates with a good understanding of both food manufacturing nutrition and health. The course has been specifically designed to meet the demand for such graduates.

Course Duration: To be advised.

Admission Requirements: The minimum entry requirement for persons under 21 years of age on 1 January 2001 is the satisfactory completion of a Year 12 course of study approved by the Victorian Curriculum and Assessment Board (VCAB), or an equivalent program approved by Victoria University for entry. Prerequisites for the Nutrition, Food and Health Science course are Units 3 and 4 in English and Mathematics (any). There is also provision for mature age entry and entry as a disadvantaged person. Mature age provisions apply to those persons aged 21 and over as at 1 January for the year in which they are applying. Certain subjects passed in other courses at Victoria University or at other Institutions may be considered for advanced standing. Provision will be made for articulation from TAFE science programs with appropriate credit.

Course Structure: The Bachelor of Science program requires the equivalent of three years full-time study.

Year 1
Semester One
ACE1913  PROFESSIONAL COMMUNICATION 12
RBF1310  BIOLOGY 12
RCS1601  CHEMISTRY 12
RMA1210  STATISTICS FOR THE BIOLOGICAL AND CHEMICAL SCIENCES 12

Year 2
Semester One
RBF2520  BIOCHEMISTRY 12
RCS2502  MEDICAL CHEMISTRY 12
RCS2100  ORGANIC CHEMISTRY 2A 12
RCS2601  ANALYTICAL CHEMISTRY 2A 12

Year 3
Semester One
ACE3010  WRITTEN AND ORAL COMMUNICATION 3 6
RCS3601  ANALYTICAL CHEMISTRY 3A 12
RMA3071  INTRODUCTION TO COMPUTER UTILISATION 6

Two of the following three Electives*
RCS3603  MEDICAL CHEMISTRY 3 A 12
RCS3605  FORENSIC METHODS 3A 12
RMS3030  GENETIC ENGINEERING 12

*In Year 3 students must do at least one semester of Medical Chemistry 3 and one semester of Forensic Methods 3.

Semester Two
RCAE1913  WRITTEN AND ORAL COMMUNICATION 3 6
RCS3602  ANALYTICAL CHEMISTRY 3B 12

Two of the following three Electives*
RCS3604  MEDICAL CHEMISTRY 3 B 12
RCS3606  FORENSIC METHODS 3B 12
RMS3020  GENOMICS, PROTEOMICS AND BIOINFORMATICS 12

One of the following Two Electives
RCS3607  ADVANCED ANALYTICAL ANALYSES 6
RCS3608  POLYMER TECHNOLOGY 6

*In Year 3 students must do at least one semester of Medical Chemistry 3 and one semester of Forensic Methods 3.
School of Biomedical and Health Sciences

Year 3
Semester One: Core
RBF3230  ANIMAL FOOD PROCESSING 6
RBF3730  FOOD MICROBIOLOGY 12
RBF3810  NUTRIENT AND DRUG INTERACTION 12
RNH3210  SPECIAL TOPICS IN NUTRITION, FOOD AND HEALTH SCIENCE 6
RBF3250  FOOD SAFETY AND QUALITY 12

Semester Two: Core
RBF3235  PLANT FOOD PROCESSING 6
RBF3240  FUNCTIONAL FOODS 12
RBM3960  NUTRITIONAL FRONTIERS 12
RBF3900  PROJECT 12
RBF3255  PRODUCT DEVELOPMENT 6

Other Course Specific Notes

Professional Recognition
The Food Science and Technology specialisation has been accredited by the Australian Institute of Food Science and Technology and graduates in this specialisation will be eligible for membership.

Bachelor of Science (Nutritional Therapy)
Course Code: SBNT
Campus: St Albans

Course Objectives: Nutritional Therapy is founded in medical science and on peer-reviewed evidence-based research. Nutritional Therapists use manipulation of food and diet for therapeutic purposes. Often a patient’s condition can be improved by suitably matching food intake to their condition, together with nutriceutical prescription and appropriate lifestyle advice. The graduates from this course will not be Dieticians, but will be able to treat chronic non-life threatening conditions. This course is modelled on the highly successful BSc Nutritional Therapy courses offered in Europe. At present this is the only similar course in Nutritional Therapy in Australia.

The Bachelor of Science in Nutritional Therapy will provide an alternative education and training program for those wishing to apply their knowledge of Nutrition to the treatment of a range of clients by high-quality nutrition care and therapy. The objectives of the course are to produce Graduates able to function independently as Nutritional Therapists. At the end of the course, Graduates will be able to: evaluate and process requests for nutritional therapy; assess the client and formulate an appropriate course of nutritional therapy; educate the client in self-care therapy, and evaluate the client’s response to the course of treatment. The graduates of this course will be able to make a valuable contribution to society as Nutritional Therapists in private practice, as Nutrition Consultants to the healthcare and fitness industries, and as practitioners in integrated health centres.

Career Opportunities: Graduates will be able to practice as Nutritional Therapists in private practice or in other complimentary medicine practices.

Graduates should be able to obtain employment in Education, Health and Media. Opportunities for employment will exist with local and international NGOs.

Course Duration: To be advised.

Admission Requirements: Completion of Year 12 VCE, Units 3 and 4 of English with a study score above 20. You may be required to attend a selection and/or interview session.

Course Structure: Three years fulltime or part-time equivalent.

Year 1 Semester 1
RBM1100  FUNCTIONAL ANATOMY OF THE TRUNK 12
RBM1518  HUMAN PHYSIOLOGY 1 12
RBM1820  NUTRITION, SOCIETY, AND COMMUNICATION 12
RBM1110  NUTRITIONAL BIOCHEMISTRY 1 12

Semester 2
RBF2410  FOOD COMPONENTS 12
RBM1830  DIET THERAPY 1 12
RBM2570  PHYTOPHARMACEUTICS 12
RBM1528  HUMAN PHYSIOLOGY 2 12

Year 2 Semester 1
RBM2141  PHARMACOLOGY AND NUTRITION 12
RBM2260  DIET AND NUTRITION 12
RBM2530  PATHOPHYSIOLOGY 1 12
RBM2850  NUTRITIONAL THERAPEUTICS A 12

Semester 2
RBM2540  PATHOPHYSIOLOGY 2 12
RBM2220  NUTRITIONAL BIOCHEMISTRY 2 12
RBM2855  NUTRITIONAL THERAPEUTICS B 12
RBM2222  PERFORMANCE NUTRITION 12

Year 3 Semester 1
RBM3960  NUTRITIONAL FRONTIERS 12
RBM3910  PROJECT 12
RBM3850  NUTRITIONAL THERAPEUTICS C 12
RBM3950  NUTRITIONAL THERAPY IN PRACTICE 1 12

Semester 2
RBM3855  NUTRITIONAL THERAPEUTICS D 12
RBM3955  NUTRITIONAL THERAPY IN PRACTICE 2 12
RBM3970  OPERATING A CLINICAL PRACTICE 12
RBM2222  PERFORMANCE NUTRITION 12

OR
HHNO021  COUNSELLING SKILLS FOR NATURAL MEDICINE PRACTITIONERS 12

Third year students must select one of RMB2222 or HHNO021

Professional Recognition
Graduates will be eligible for full membership of the following professional bodies upon completion of the course
- Australian Nutrition Society;
- British Association of Nutritional Therapy; (awaiting formal notification)
and/or Australian Association of Nutritional Therapists
FACULTY OF HEALTH, ENGINEERING AND SCIENCE

BACHELOR OF SCIENCE (OCCUPATIONAL HEALTH AND SAFETY)
Course Code: SBOH
Campus: St Albans
Course Objectives: (For continuing students only)
This course equips students to use methods of scientific investigation to solve occupational health and safety problems; identify health hazards and be able to make appropriate recommendations to management.

The aim of the course is to produce graduates with a combination of knowledge and skills of science and disciplines related to occupational health and safety while having a focus on the management of occupational health and safety.

At the end of the course graduates should be able to:
- utilise methods of scientific investigation in solving, occupational health and safety problems;
- thoroughly understand the scientific and technological bases of occupational health and safety;
- engender the professional confidence and respect of others;
- identify health hazards and safety problems and be able to make appropriate recommendations to management;
- understand and be able to effectively participate in decision-making processes in organisations in order to manage the promotion and implementation of occupational health and safety matters;
- act as an agent of change to improve OH&S at a workplace.

Course Duration: To be advised.
Admission Requirements: VCE entry Units 3 and 4 - a study score of at least 20 in English (any) and in one of biology or chemistry. Middle band: Re-ranking is based on prerequisite studies and science (any). TAFE entry Normal entry requirements for articulation to the Bachelor of Science is the successful completion of an Advanced Diploma in Occupational Health and Safety. A significant number of such applicants are expected to be Occupational Health and Safety professionals seeking to upgrade their Advanced Diploma qualification to a degree in Occupational Health and Safety. Admission Requirements may be determined by the Head of School for applicants who possess other appropriate TAFE or university qualifications related to occupational health and safety. The course aims at maximising student access by providing flexibility and modulation in the delivery of units. Students in level 3 of the course can complete all units by distance education mode.

Course Structure: The course based on VCE entry will be equivalent to three years full-time study for students entering the course at Year 1 or part-time equivalent.

VCE entry: The course will comprise two 12 week semesters or 24 weeks per year for three years. Faculty of Health, Engineering and Science based units and some Faculty of Business and Law units will be delivered at the St Albans Campus. Other Faculty of Business and Law units will be delivered at the Footscray Park campus.

TAFE entry: Completion of appropriate TAFE courses such as the Advanced Diploma in OH&S will enable students to enter the course with advanced standing. For details of credit arrangements go to: www.vu.edu.au/pathways.

Year 1
Semester 1
RBM1501 FOUNDATIONS IN BIOMEDICAL SCIENCE A 12
RBM1518 HUMAN PHYSIOLOGY 1 12
BMO1102 MANAGEMENT AND ORGANISATION BEHAVIOUR 12
RBM1061 SAFETY 1 12

Year 2
Semester 1
RBM2060 ERGONOMICS 12
RBM2050 OCCUPATIONAL HYGIENE 12
BMO3220 HUMAN RESOURCE MANAGEMENT 12
BLO2233 HEALTH AND SAFETY LAW 12
Semester 2
RBM2461 WORKPLACE PLACEMENT A 12
BMO3476 TRAINING AND DEVELOPMENT 12
BMO3323 EMPLOYEE RELATIONS MANAGEMENT 12
BMO3328 HEALTH AND SAFETY MANAGEMENT 12
Year 3
Semester 1
RBM2261 PUBLIC AND ENVIRONMENTAL HEALTH 12
RBM2361 SAFETY PRACTICE 12
RBM3061 EPIDEMIOLOGY 12
RBM3161 TOXICOLOGY 12
Semester 2
RBM3361 OCCUPATIONAL HEALTH AND SAFETY PROJECT 12
BMO3351 WORKPLACE INDUSTRIAL RELATIONS 12
RBM3261 RISK MANAGEMENT 12
RBM3462 WORKPLACE PLACEMENT B 12

Other Course Specific Notes: In addition, RMB2061 Occupational Hygiene Science and RMB 2161 Ergonomic Science are required if course entry is the Advanced Diploma of Occupational Health and Safety from TAFE.

GRADUATE DIPLOMA IN BIOTECHNOLOGY
Course Code: SGBT
Campus: Werribee
Course Objectives: This program provides students with sound knowledge at an advanced level of the scientific principles underlying the basis of the biotechnology industry and research; problem-solving skills to use and locate information on problems from textbooks, scientific journals and the Internet; and excellent oral and written communication skills including discussions on intellectual property, commercialisation and ethical considerations.

The Graduate Diploma in Biotechnology is designed to provide students with skills, knowledge and expertise in the field of Biotechnology and related areas. The specific aims of the course are to provide students with: (a) A sound knowledge at an advanced level of the scientific principles underlying the basis of the biotechnology industry and research in the area, (b) Problem solving skills (c) The skills to use and locate information on problems relating to biotechnology from textbooks, scientific journals and the Internet. (d) Excellent oral and written communication skills including discussions on various topics related to the biotechnology field.
Career Opportunities: Research scientist/office, technical officer/adviser, biotechnology company director.

Course Duration: To be advised.

Admission Requirements: Applications will be considered from graduates who have completed an undergraduate degree, comprising the equivalent of at least three years full-time study in an approved area of study. Eligible areas include Biology, Chemistry, Biochemistry, Biomedical Sciences, Veterinary Science, MBBS and other related fields. Academic performance in the undergraduate degree will be required to be, on average, at credit level or higher. A substantial amount of laboratory work will be required to have been completed in the undergraduate degree so that students are already proficient in basic biological, microbiological and chemical laboratory techniques. In addition, there will be the normal requirement for a minimum score of 6.5 in the IELTS English language test (exceptions may be made by the Faculty).

Course Structure: The duration of the course is one year full-time with the option of a part-time equivalent.

The Graduate Diploma in Biotechnology is a nested award within the Master of Science - Biotechnology (Biotechnology and Bioinformatics Streams) and requires completion of the units in the first year of the Masters course. This requires completion of the 6 core units in Group A and 2 electives from Groups B or C listed below, to a total of 96 credit points. After completion of this year, students can elect to study one more year and complete the MSc - Biotechnology (SMBT).

(Group A, Core Units)
- RMS5110 MOLECULAR GENETICS THEORY 12
- RMS5120 APPLIED GENETIC ENGINEERING 12
- RMS5140 BIOPROCESSING TECHNOLOGY PRINCIPLES 12
- RMS5145 BIOPROCESSING TECHNOLOGY APPLICATIONS 12
- RMS5130 FUNCTIONAL GENOMICS & BIOINFORMATICS THEORY 12
- RMS5135 FUNCTIONAL GENOMICS & BIOINFORMATICS APPLICATIONS 12

Examples of Elective Units
- (Group B)
  - RMS5160 INTELLECTUAL PROPERTY AND COMMERCIALISATION IN BIOTECHNOLOGY 12
  - RMS5150 ETHICS AND REGULATORY AFFAIRS IN BIOTECHNOLOGY 12
  - RMS6130 BIOINFORMATICS I 12
  - RMS6170 DRUG DESIGN & DEVELOPMENT 12
  - RMS6135 BIOINFORMATICS II 12
  - RMS6140 CELL CULTURE AND FERMENTATION TECHNOLOGY 12
  - RCS5100 RESEARCH METHODOLOGY 12

Examples of Elective Units
- (Group C)
  - RCM5800 OBJECT ORIENTED PROGRAMMING GD1 12
  - RCM6607 STATISTICAL COMPUTING 12
  - RCM5802 INFORMATION SYSTEMS 12
  - RCM5803 DATA STRUCTURES AND PROGRAMMING 12
  - RCM5602 QUALITY MANAGEMENT AND STATISTICS 12
  - BMO5602 BUSINESS PROJECT MANAGEMENT 12
  - BLO5602 LAW FOR MANAGEMENT 12
  - BLB5500 COMPARATIVE LEGAL SYSTEMS 12
  - BHO6505 MARKETING MANAGEMENT 12
  - BEO5304 INTERNATIONAL BUSINESS OPERATIONS 12

GRADUATE DIPLOMA IN ENVIRONMENTAL MANAGEMENT
Course Code: SGEM
Campus: Werribee, City Flinders, Sunbury

Course Objectives: (For continuing students only)
The course is aimed at producing graduates with a good understanding of contemporary environmental problems and solutions. A mixture of coursework will be provided including waste management, water pollution control and environmental law. The course is aimed at producing graduates with a good understanding of contemporary environmental problems and solutions. A mixture of coursework will be provided including waste management, water pollution control and environmental law. Course Duration The course will be offered in full-time and part-time modes.

Course Duration: To be advised.

Admission Requirements: The normal entry requirement is a relevant degree or diploma, but special admission may be granted for applicants without the required qualifications but with a number of years of relevant industrial experience.

Course Structure: Session 1
- RCS5111 PRINCIPLES OF ENVIRONMENTAL SCIENCE AND MANAGEMENT 12
- RCS5121 ENVIRONMENTAL LAW AND STANDARDS 1 12
- RCS5131 WATER POLLUTION MONITORING & LIQUID WASTE MANAGEMENT 12
- RCS5172 SOLID WASTE MANAGEMENT 12

Session 2
- RCS5100 RESEARCH METHODOLOGY 12
- RCS5132 ENVIRONMENTAL LAW AND STANDARDS 2 12
- RCS5141 AIR QUALITY MANAGEMENT 12
- RCS5192 CLEANER PRODUCTION TECHNOLOGY AND WASTE MINIMISATION 12

Other Course Specific Notes Assessment
Assessment will consist of assignments, field reports, class presentations and end-of-semester examinations.

BACHELOR OF SCIENCE (HONOURS) BIOLOGY (BIOTECHNOLOGY)
Course Code: SHBB
Campus: Werribee, City Flinders, Sunbury

Course Objectives: The aim of the honours program is to provide a course of advanced study at a fourth year level which builds on the knowledge and skills developed at degree level, and to prepare students for postgraduate research by developing skills in working independently, critical analysis of information, problem-solving, devising, designing and conducting experimental work and written and oral communication.

An Honours program is available in each of the degree specialisations. The aim of the honours program is to provide a course of advanced study at a fourth year level which builds on the knowledge and skills developed at degree level, and to prepare...
students for postgraduate research by developing skills in: working independently, critical analysis of information, problem-solving, devising, designing and conducting experimental work and written and oral communication.

Course Duration: To be advised.

Admission Requirements: To qualify for entry to the honours program, applicants must hold a degree or equivalent with major studies in a relevant discipline and should normally have obtained a ‘credit’ average, or equivalent, in the final year of the degree.

Course Structure: The courses are offered on a full-time basis over one year or equivalent if on a part-time basis. Entry to the Honours program for the Conservation Biology and Environmental Management specialisation can be either at the beginning of the academic year (February) or at a mid-year intake (July) to allow for field-based research with seasonal limitations.

Semester 1
RBF4001  SCIENCE HONOURS 48
Semester 2
RBF4002  SCIENCE HONOURS 48

Other Course Specific Notes
The course consists of advanced coursework and a research thesis. Assessment will be based on written assignments, seminar presentations, a written examination and the research thesis.

Coursework assessment will be based on seminar presentations, written assignments and examination.

BACHELOR OF SCIENCE (HONOURS) (BIOMEDICAL SCIENCES)
Course Code: SHBM
Campus: Werribee, City Flinders, Sunbury

Course Objectives: This course comprises a research project including two oral presentations, a literature review and the project thesis.

RBM4001 and RBM4002 Science Honours 1 and 2 will comprise a research project including two oral presentations, a literature review and the project thesis. Honours Course Work

There will be two course work units comprising of Advanced Experimental Design and Statistics, and Research Conduct, Ethics and Training. In special cases undergraduate units of studies may be substituted for course work units when it is felt that a student would require further studies of a specialised nature. The lecture or reading programs that make up the course work units will be determined by student’s preferences and will vary from time to time. Course work units will be assessed by oral presentations, written assignments or a written examination.

Course Duration: To be advised.

Admission Requirements: To qualify for admission to the course, an applicant must have successfully completed a course of study at year 12 or equivalent*. Year 12 Prerequisites: Units 3 and 4 - study score of at least 20 in English (any). Selection Mode: Current Year 12 applicants: Equivalent National Tertiary Entrance Rank (ENTER) and two-stage process with a middle-band of approximately 20%

Non-current Year 12 applicants: ENTER and/or academic record*. Middle-band: consideration is given to performance in the full range of VCE studies undertaken.* Applicants who have not completed Year 12 but who possess appropriate educational qualifications, work or life experiences which would enable them to successfully undertake the course, will be considered for admission. In addition to satisfying the entry requirements for Australian resident students or demonstrating equivalence, overseas students must provide evidence of proficiency in the English language: International English Language Testing System - overall score of 6 and no individual band score less than 6.0.

Course Structure:
Semester 1
RBM4001  SCIENCE HONOURS 1 48
Semester 2
RBM4002  SCIENCE HONOURS 2 48

BACHELOR OF SCIENCE (HONOURS) (CHEMICAL SCIENCES)
Course Code: SHCB
Campus: Werribee, City Flinders, Sunbury

Course Objectives: (for SHBT, SHFT and SHCB) An Honours program is available in each of the degree specialisations. The aim of the honours program is to provide a course of advanced study at a fourth year level which builds on the knowledge and skills developed at degree level, and to prepare students for postgraduate research by developing skills in: working independently, critical analysis of information, problem-solving, devising, designing and conducting experimental work and written and oral communication.

Course Duration: To be advised.

Admission Requirements: To qualify for entry to the honours program, applicants must hold a degree or equivalent with major studies in a relevant discipline and should normally have obtained a ‘credit’ average, or equivalent, in the final year of the degree.

Course Structure: The courses are offered on a full-time basis over one year or equivalent if on a part-time basis. Entry to the Honours program for the Conservation Biology and Environmental Management specialisation can be either at the beginning of the academic year (February) or at a mid-year intake (July) to allow for field-based research with seasonal limitations.

Year 1
Semester 1
RCS4201  HONOURS COURSEWORK 24
RCS4601  HONOURS PROJECT PART TIME 24
Semester 2
RCS4602  HONOURS PROJECT 48
RCS4610  HONOURS PROJECT PART TIME 24

Part Time students enrol in RCS4610 over 2 semesters (24 credit points each semester)

Other Course Specific Notes
The course consists of advanced coursework and a research thesis. Assessment will be based on written assignments, seminar presentations, a written examination and the research thesis.

Coursework assessment will be based on seminar presentations, written assignments and examination.

BACHELOR OF SCIENCE (HONOURS) (NUTRITION AND FOOD SCIENCES)
Course Code: SHNF
Campus: Werribee, City Flinders, Sunbury

Course Objectives: The aim of this honours program is to provide advanced study at a fourth year level which builds on the knowledge and skills developed at degree level, and to prepare students for postgraduate research by developing skills in working independently, critical analysis of information, problem-solving, devising, designing and conducting experimental work and written and oral communication.

An Honours program is available in each of the degree specialisations. The aim of the honours program is to provide a course of advanced study at a fourth year level which builds on the knowledge and skills developed at degree level, and to prepare
students for postgraduate research by developing skills in: working independently, critical analysis of information, problem-solving, devising, designing and conducting experimental work and written and oral communication

Course Duration: To be advised.

Admission Requirements: To qualify for entry to the honours program, applicants must hold a degree or equivalent with major studies in a relevant discipline and should normally have obtained a “credit” average, or equivalent, in the final year of the degree.

Course Structure: The courses are offered on a full-time basis over one year or equivalent if on a part-time basis. Entry to the Honours program for the Conservation Biology and Environmental Management specialisation can be either at the beginning of the academic year (February) or at a mid-year intake (July) to allow for field-based research with seasonal limitations.

Semester 1
- RBF4001 SCIENCE HONOURS 48

Semester 2
- RBF4002 SCIENCE HONOURS 48

Other Course Specific Notes
The course consists of advanced coursework and a research thesis. Assessment will be based on written assignments, seminar presentations, a written examination and the research thesis.

Coursework assessment will be based on seminar presentations, written assignments and examination.

MASTER OF SCIENCE IN BIOTECHNOLOGY

Course Code: SMBI

Campus: Werribee, City Flinders, Sunbury

Course Objectives: This Masters program is designed to provide students with skills, knowledge and expertise in the field of Biotechnology and related areas. The specific aims of the course are to provide students with:

(a) A sound knowledge at an advanced level of the scientific principles underlying the basis of the biotechnology industry and research in the area.

(b) Problem solving skills

(c) The skills to use and locate information on problems relating to biotechnology from textbooks, scientific journals and reliable sources on the Internet.

(d) Excellent oral and written communication skills including discussions on various topics related to the biotechnology field.

(e) An opportunity to further develop their skills and knowledge in the biotechnology, environmental management or food science, depending on electives chosen in the second stage of the course.

Course Duration: 2 years

Admission Requirements: Applications will be considered from graduates who have completed an undergraduate degree, comprising the equivalent of at least three years full-time study in an approved area of study. Eligible areas include Biology, Chemistry, Biochemistry, Biomedical Sciences, Veterinary Science, MBBS and other related fields. Academic performance in the undergraduate degree will be required to be, on average, at credit level or higher. A substantial amount of laboratory work will be required to have been completed in the undergraduate degree so that students are already proficient in basic biological, microbiological and chemical laboratory techniques. In addition, there will be the normal requirement for a minimum score of 6.5 in the IELTS English language test (exceptions may be made by the Faculty).

Course Structure: The Master of Biotechnology course consists of 16 units worth 192 credit points. In the first year of the degree, students are required to take 8 core units to a total of 96 credit points. In the second year of the degree students are required to take 3 core units and choose elective units to a total of 96 credit points.

Other units from the School of Molecular Sciences or other schools and faculties may also be taken as electives subject to approval by the Course Coordinator. Note that an exit point (Graduate Diploma in Biotechnology - SGBT) is also available after successful completion of the first year of this course i.e. the 8 core units, completing a total of 96 credit points. This is a nested award within the Master of Science - Biotechnology.

Year 1, Semester 1
- RMS5145 BIOPROCESSING TECHNOLOGY APPLICATIONS 12
- RMS5140 BIOPROCESSING TECHNOLOGY PRINCIPLES 12
- RMS5110 MOLECULAR GENETICS THEORY 12
- RMS5120 APPLIED GENETIC ENGINEERING 12

Year 1, Semester 2
- RCS5100 RESEARCH METHODOLOGY 12
- RMS5150 ETHICS AND REGULATORY AFFAIRS IN BIOTECHNOLOGY 12
- RMS6140 CELL CULTURE AND FERMENTATION TECHNOLOGY 12
- RMS6170 DRUG DESIGN & DEVELOPMENT 12

Students may exit with a Graduate Diploma in Biotechnology after successfully completing 8 units (96 credit points)

Year 2, Semester 1
- RMS6210 RESEARCH PROJECT (BIOTECHNOLOGY) 1 24

Plus electives from List A or approved units from other courses*

Year 2, Semester 2
- RMS5130 FUNCTIONAL GENOMICS & BIOINFORMATICS THEORY 12
- RMS5135 FUNCTIONAL GENOMICS & BIOINFORMATICS APPLICATIONS 12

Plus electives from list B or approved units from other courses**

MASTER OF SCIENCE (BIOTECHNOLOGY) (BIOTECHNOLOGY & BIOINFORMATICS STREAMS)

Course Code: SMBT

Campus: Werribee

Course Objectives: (For continuing students only)

This Masters program is designed to provide students with skills, knowledge and expertise in the field of Biotechnology and related areas. The specific aims of the course are to provide students with:

(a) A sound knowledge at an advanced level of the scientific principles underlying the basis of the biotechnology industry and research in the area.

(b) Problem solving skills

(c) The skills to use and locate information on problems relating to biotechnology from textbooks, scientific journals and reliable sources on the Internet.

(d) Excellent oral and written communication skills including discussions on various topics related to the biotechnology field.

(e) An opportunity to further develop their skills and knowledge in the biotechnology, environmental management or food science, depending on electives chosen in the second stage of the course.

Course Duration: 2 years

Admission Requirements: Applications will be considered from graduates who have completed an undergraduate degree, comprising the equivalent of at least three years full-time study in an approved area of study. Eligible areas include Biology, Chemistry, Biochemistry, Biomedical Sciences, Veterinary Science, MBBS and other related fields. Academic performance in the undergraduate degree will be required to be, on average, at credit level or higher. A substantial amount of laboratory work will be required to have been completed in the undergraduate degree so that students are already proficient in basic biological, microbiological and chemical laboratory techniques. In addition, there will be the normal requirement for a minimum score of 6.5 in the IELTS English language test (exceptions may be made by the Faculty).

Course Structure: The Master of Biotechnology course consists of 16 units worth 192 credit points. In the first year of the degree, students are required to take 8 core units to a total of 96 credit points. In the second year of the degree students are required to take 3 core units and choose elective units to a total of 96 credit points.
work will be required to have been completed in the undergraduate degree so that students are already proficient in basic biological, microbiological and chemical laboratory techniques. In addition, there will be the normal requirement for a minimum score of 6.5 in the IELTS English language test (exceptions may be made by the Faculty).

Course Structure: The duration of the course is two years full-time with the option of a part-time equivalent.

MASTER OF SCIENCE IN ENVIRONMENTAL MANAGEMENT
Course Code: SMEM

Campus: Werribee

Course Objectives: The program in Environmental Management will provide students with a solid foundation in environmental science that will allow them to understand the major aspects of environmental assessment. Students completing the full postgraduate course will have the knowledge and skills required to identify, analyse and respond to a range of environmental management issues; work with a diversity of stakeholders with differing values and needs; develop strategies for environmental assessment, management and evaluation; use field study techniques and methods appropriately and effectively; collect and analyse data using computer technology; write reports and communicate with a range of audiences; and operate as an environmental manager in a professional context.

The Masters program is designed to enhance the students’ range of knowledge in environmental waste management and pollution control, to provide additional skills in research and development and to enable a focusing of practical skills into a specific research area which may be related to the candidates’ current employment.

Course Duration: To be advised.

Admission Requirements: To qualify for admission to the course an applicant must
have satisfactorily completed a four year science based undergraduate degree, or a science based honours degree, or a three year science based undergraduate degree plus relevant employment experience.

Applicants who do not meet these qualifications may be admitted after the completion of an approved course of pre-study, or on submission of such other evidence of academic, professional or vocational attainment to indicate that the applicant possesses the educational preparation and capacity to pursue the course.

All admissions are subject to approval by the course selection officer.

Course Structure: The course requires successful completion of a program of compulsory and elective subjects, totalling a minimum of 192 credit points.

Semester 1

RCS5100  RESEARCH METHODOLOGY 12
RMS5101  ENVIRONMENTAL MANAGEMENT AS A PROFESSION 12
RMS5102  TERRESTRIAL ECOLOGY 12
RMS5103  AQUATIC ECOLOGY 12

Students may exit with a Graduate Certificate in Environmental Management after successfully completing 4 units (48 credit points)

Semester 2

RMS5200  ENVIRONMENTAL MANAGEMENT IN A CHANGING WORLD 12
RMS5201  LANDSCAPE SCALE RESTORATION 12
RMS5202  AQUATIC SYSTEMS MANAGEMENT 12
RCS5100  RESEARCH METHODOLOGY 12

Students may exit with a Graduate Diploma in Environmental Management after successfully completing 8 units (96 credit points)

Year 2

Semester 1

RMS6100  BIODIVERSITY ASSESSMENT 12
RMS6101  GEOGRAPHICAL INFORMATION SYSTEMS AND REMOTE SENSING 12
RMS6102  ENVIRONMENTAL TOXICOLOGY 12
RMS6103  ECOLOGY OF INVASIVE SPECIES 12

Semester 2

RMS6201  PROTECTED AREA MANAGEMENT 12
RMS6202  ENVIRONMENTAL MANAGEMENT PROJECT 12
OR TWO ELECTIVES FROM LIST A

RMS6203  ENVIRONMENTAL BIOTECHNOLOGY 12
LIST A ELECTIVES

RMS5150  ETHICS AND REGULATORY AFFAIRS IN BIOTECHNOLOGY 12
RMS6140  CELL CULTURE AND FERMENTATION TECHNOLOGY 12
RMS6170  DRUG DESIGN & DEVELOPMENT 12
RMS6205  MEDICAL BIOTECHNOLOGY 12

Students may exit with a Master of Science in Environmental Management after successfully completing 16 units (192 credit points)

MASTER OF SCIENCE (FOOD SCIENCE)
Course Code: SMFO

Campus: Werribee, City Flinders, Sunbury

Course Objectives: The course is designed to provide professional training in food science and technology for graduates in science, applied science, engineering, agricultural and other related disciplines who may or may not have had previous formal training in this area. The course seeks to equip graduates with the necessary knowledge and skills required to operate effectively in the food industry at various management levels. The course is designed not only to train recent graduates as food technologists, but also to enable those already employed in the food and associated industries to enhance their professional status.

The course is designed to provide professional training in food science and technology for graduates in science, applied science, engineering, agricultural and other related disciplines who may or may not have had previous formal training in this area. The course seeks to equip graduates with the necessary knowledge and skills required to operate effectively in the food industry at various management levels. The course is designed not only to train recent graduates as food technologists, but also to enable those already employed in the food and associated industries to enhance their professional status.

Course Duration: To be advised.

Admission Requirements: To qualify for admission to the course an applicant must have satisfactorily completed a four year science based undergraduate degree, or a science based honours degree, or a three year science based undergraduate degree plus relevant employment experience. Applicants who do not meet these
Qualifications may be admitted after the completion of an approved course of pre-study, or on submission of such other evidence of academic, professional or vocational attainment to indicate that the applicant possesses the educational preparation and capacity to pursue the course.

Course Structure: The course requires the successful completion of a program of compulsory and elective subjects, totalling a minimum of 192 credit points. Subject to demand, the course is offered on a full-time basis over two years or equivalent part time.

Year 1

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<thead>
<tr>
<th>Semester 1</th>
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<tbody>
<tr>
<td>RBF5110</td>
<td>FUNDAMENTALS OF FOOD MICROBIOLOGY</td>
<td>12</td>
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<tr>
<td>RBF5120</td>
<td>FUNDAMENTALS OF FOOD SAFETY AND QUALITY ASSURANCE</td>
<td>12</td>
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<tr>
<td>RBF5130</td>
<td>FOOD PRODUCT AND PROCESS DEVELOPMENT</td>
<td>12</td>
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<tr>
<td>RBF5140</td>
<td>CHEMISTRY OF FOODS</td>
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Semester 2

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<tr>
<td>RBF5210</td>
<td>FUNDAMENTALS OF PRESERVATION AND PROCESSING TECHNOLOGIES</td>
<td>12</td>
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<tr>
<td>RBF5220</td>
<td>FUNDAMENTALS OF FOOD ANALYSIS</td>
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Subject RCM5230 not found

RCS5100 RESEARCH METHODOLOGY 12

Students may exit with a Graduate Diploma in Food Science after successfully completing 8 units of study (96 credit points)

Year 2

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<tr>
<td>RBF6110</td>
<td>MAJOR PROJECT IN FOOD SCIENCE AND TECHNOLOGY</td>
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<td>And One Unit of Study from Commodity Electives (Plant foods), 12 credit points</td>
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<tr>
<td>And One Unit of Study from General electives, 12 credit points</td>
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Semester 2

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<tr>
<td>RBF6210</td>
<td>MAJOR PROJECT IN FOOD SCIENCE AND TECHNOLOGY - 2</td>
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<tr>
<td>And One Unit of Study from Commodity Electives (Animal foods), 12 credit points</td>
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<td>And One Unit of Study from General Electives, 12 credit points</td>
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Commodity Electives (Plant foods)

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<tbody>
<tr>
<td>RBF6120</td>
<td>FRUIT AND VEGETABLE SCIENCE AND TECHNOLOGY</td>
<td>12</td>
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<tr>
<td>RBF6130</td>
<td>GRAIN SCIENCE AND TECHNOLOGY</td>
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Commodity Electives (Animal foods)

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<tr>
<td>RBF6220</td>
<td>MUSCLE FOOD SCIENCE AND TECHNOLOGY</td>
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<td>RBF6220</td>
<td>DAIRY SCIENCE AND TECHNOLOGY</td>
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General Electives

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<tr>
<td>RMS5145</td>
<td>BIOPROCESSING TECHNOLOGY APPLICATIONS</td>
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<td>RMS5140</td>
<td>BIOPROCESSING TECHNOLOGY PRINCIPLES</td>
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<td>RMS6140</td>
<td>CELL CULTURE AND FERMENTATION TECHNOLOGY</td>
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<td>RBF6310</td>
<td>MINOR PROJECT IN FOOD SCIENCE AND TECHNOLOGY</td>
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<td>RBF6320</td>
<td>SPECIAL TOPICS IN FOOD SCIENCE AND TECHNOLOGY</td>
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<td>BHO5583</td>
<td>MARKETING RESEARCH</td>
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<tr>
<td>RBF6330</td>
<td>INDUSTRY BASED TRAINING</td>
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*Other Units of Study from other Schools and Faculties may also be taken as electives subject to approval by the Course Coordinator.

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**MASTER OF SCIENCE (RESEARCH)**

Course Code: SRHC, SRLC, SROT

Campus: Werribee, City Flinders, Sunbury

Course Objectives: The aim of the course is to provide students with a basic grounding in the principles and practice relevant to business in today's corporate world. It is anticipated that students will transfer into a prescribed business degree program thus deepening knowledge in particular areas and developing a specialist skill base.

Course Duration: To be advised.

Admission Requirements: To qualify for admission to the course, an applicant must have successfully completed a course of study at year 12 or equivalent*. Year 12 Prerequisites: Units 3 and 4 - study score of at least 20 in English (any). Selection Mode: Current Year 12 applicants: Equivalent National Tertiary Entrance Rank (ENTER) and two-stage process with a middle-band of approximately 20%. Non-current year 12 applicants: ENTER and/or academic record*. Applicants who have not completed Year 12 but who possess appropriate educational qualifications, work or life experiences which would enable them to successfully undertake the course, will be considered for admission. In addition to satisfying the entry requirements for Australian resident students or demonstrating equivalence, overseas students must provide evidence of proficiency in the English language:

International English Language Testing System - overall score of 6 and no individual band score less than 6.0.

Course Structure: Australian Food Marketing Centre

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School of Biomedical and Clinical Sciences

Biomedical Sciences Stream

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School of Molecular Sciences

Biotechnology Stream

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Food Science Stream

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## Coursework Programs

The School offers a range of coursework programs at postgraduate level:

- **Graduate Diplomas in:**
  - Computer Science
  - Computer and Mathematical Sciences
  - Multimedia Information Networking
  - Software Engineering
- **Master of Science in:**
  - Computer Science
  - Computer and Mathematical Sciences
  - Software Engineering
SUBJECTS

Below are subject details for courses offered by the School of Biomedical and Health Sciences in 2010. IMPORTANT NOTICE: Not all elective subjects for courses offered by the school are listed below. There are numerous elective possibilities that the school can choose to offer and those selected will vary from year to year. Details of these electives will be advised by the school.

HFB1111 PROFESSIONAL PRACTICE 1

Locations: St Albans,
Pre-requisites: Nil
Credit Points: 12

Credit Points: 12
Learning Outcomes: On successful completion of this unit, it is expected that students will be able to:

- Apply principles of consent and confidentiality when obtaining and documenting a health history.
- Demonstrate the process of history taking in order to obtain a comprehensive health history, using effective communication techniques.
- Demonstrate the use of, and differentiate between, facilitation, reflection, clarification, empathetic responses, confrontation and interpretation.
- Recognise scene hazards and potential hazards.
- Describe methods of making a scene safe.
- Relate the importance of accurate scene assessment and the importance of early and accurate communication.
- Describe and demonstrate methods of assessing medical and trauma patients.
- Describe and demonstrate methods of assessing the conscious and the apparently unconscious patient.
- Describe and demonstrate primary and secondary patient surveys.
- Describe and demonstrate the use of oxygen delivery systems and assisted ventilation to correct hypoxia in a hypoventilation or apnoic patient.
- Satisfactorily demonstrate cardiopulmonary resuscitation.
- Demonstrate the ability to apply with body substance isolation guidelines.
- Perform the assessment of a patient expected, or identified as having, infectious or communicable disease.
- Demonstrate the proper disposal of contaminated wastes and supplies.
- Demonstrate disinfection of patient care equipment.
- Demonstrate correct manual handling techniques and the use of appropriate equipment to assist in the lifting and movement of patients in a variety of pre-hospital care scenarios.
- Explain biomechanical principles in the lifting and manual handling of patients and patient care equipment.
- Identify strategies to minimise manual handling injuries in the work place.
- Demonstrate effective and safe patient lifting techniques using the following lifting aids:
  - Stretcher
Learning outcomes:

- Students will be able to:
  - Explain the relevance and impact of ethical and legal principles and processes
  - Discuss how ethical and legal practices and issues may influence paramedic practice
  - Describe and locate commonly-used statutes used in ethics and law
  - Discuss how ethical and legal practices and issues may influence paramedic practice
  - Demonstrate the correct methods of splinting pelvic and limbs fractures.
  - Demonstrate the pre-hospital management of severe musculoskeletal injury.
  - Deliver paramedic clinical skills in an appropriate clinical setting.

Class Contact: Eighty-eight (88) hours over one 12-week semester comprising four (4) hour per week practical classes and self-directed learning utilising the paramedic interactive curriculum and forty (40) hours clinical placement.

Required Reading: None

Assessment: This unit has three assessment items. Practical skills will be assessed using criterion referenced clinical skills assessment format. Students will be provided with clinical skills assessment (satisfactory/unsatisfactory) forms by the unit coordinator. Knowledge, skills and values developed in this unit will be assessed through group discussion and casework problem solving exercises.

Credit Points: 12

HFB1113 PRE-HOSPITAL ETHICAL AND LEGAL ISSUES

Locations: St Albans,

Pre-requisites: nil

Descriptions: This unit is designed for ambulance paramedic students to have a clear understanding of the ethical and legal issues and their implications for paramedics and in the use paramedic practice. This unit provides students with an introduction to ethical and legal issues relating to employment as a paramedic. The themes of client autonomy and self-determination, client rights and professional responsibility are examined within the context of the pre-hospital care setting.

Credit Points: 12

Learning Outcomes: On successful completion of this unit, students are expected to:

- Define and explain common terminology and abbreviations used in ethics and law;
- Describe and locate commonly-used statutes used in ethics and law;
- Discuss how ethical and legal practices and issues may influence paramedic practice;
- Explain the relevance and impact of ethical and legal principles and processes within the healthcare systems.

Class Contact: Forty-eight (48) hours over one 12-week semester comprising four (4) hours per week of lectures, tutorials, practicals, self-directed learning activities and online support.


Assessment: This unit has three assessment items: one assignment (1500 words) (30%); one case study (1500 words) (30%); one 2-hour theory examination (40%). To obtain a pass or higher in this graded unit, normally all components of assessment must be submitted and an aggregate mark of 50% must be attained.

HFB1201 HEALTH ORGANISATIONS

Locations: St Albans,

Pre-requisites: HFB1111 Professional Practice 1; or equivalent

Descriptions:

- Australian health care system
- Health policy in the Australian context
- Structure and management of health organisations
- Division of labour/ scope of practice
- Management theories
- Health politics in the Australian context
- Access to health care
- Power and knowledge: impact on decision-making

Credit Points: 12

Learning Outcomes: On successful completion of this unit, students are expected to:

- Apply an understanding of health services management in the context of the Australian society and the Australian health care system;
- Identify the key elements that determine health policy;
- Discuss the importance of quality access to health services and good management in the efficient provision of health care;
- Evaluate a range of settings (clinical, community, society) in which health promotion activities take place and the range of relevant interventions (socio-environmental, behavioural, biomedical);
- Explain the importance of knowledge of organisational behaviour to organisational effectiveness;
- Discuss influences on the development of management theories;
- Describe the relationship between power and knowledge in decision-making in healthcare settings.

Class Contact: Forty-eight (48) hours for one semester comprising lectures and tutorials.


Assessment: In order to obtain a pass or higher in this graded unit, normally all components of assessment must be submitted. Annotated Bibliography (1500 words) 30%

HFB1212 PROFESSIONAL PRACTICE 2

Locations: St Albans,

Pre-requisites: HFB1111 PROFESSIONAL PRACTICE 1; OR EQUIVALENT

Descriptions: This unit will contain:

- Australian health care system
- Health policy in the Australian context
- Structure and management of health organisations
- Division of labour/ scope of practice
- Management theories
- Health politics in the Australian context
- Access to health care
- Power and knowledge: impact on decision-making

Credit Points: 12

Learning Outcomes: On successful completion of this unit, students are expected to:

- Define and explain common terminology and abbreviations used in ethics and law;
- Describe and locate commonly-used statutes used in ethics and law;
- Discuss how ethical and legal practices and issues may influence paramedic practice;
- Explain the relevance and impact of ethical and legal principles and processes within the healthcare systems.

Class Contact: Forty-eight (48) hours over one 12-week semester comprising four (4) hours per week of lectures, tutorials, practicals, self-directed learning activities and online support.


groups13. Epidemiological health trends in Australia14. Inequality and bias in health

Credit Points: 12

Learning Outcomes: On successful completion of this unit, it is expected that
students will be able to:1. Understand the ways in which the sociological approach

describe the work of prominent social theorists, as they pertain to models of
the sociology of health and medicine.3. Define and discuss the concepts of ‘health’ and

illness’. 4. Describe and discuss the role of the sick’ person in various socioeconomic, religious and cultural contexts. 5. Compare and contrast the biomedical models’ approach and treatment of various illnesses, to that of the sociological perspective. 6. Discuss how a society’s view or model of health influences the structure of the health system, and the role of culture in the provision of health care services. 7. Describe and discuss the different sociological models of death and dying within the context of different socioeconomic, religious and cultural groups, and compare how practices differ between groups. 8. Describe and discuss the various models of grief within the context of different socioeconomic, religious and cultural groups. 9. Discuss the prevalence and treatment of disabilities within the context of different socioeconomic, religious and cultural groups. 10. Discuss the concept of sociological, religious and cultural construction and moulding of what are traditionally considered biological traits, such as gender and age. 11. Discuss and describe the patterns of mental illness within society, in the context of a sociological model. 12. Describe and define multiculturalism as it relates to the Australian society. 13. Describe the health trends and epidemiology of disease in Australian society as they pertain to different socioeconomic and cultural groups. 14. Discuss the concept of cultural footprints relevant to current sociological expectations. 15. Discuss how social conditioning and cultural expectations can create inequality within society, within the context of health and specific disease (such as HIV, disabilities and mental illness). 16. Discuss how social conditioning influences health, gender and age. 17. Describe and discuss the relationship between ethnicity and mental health in the context of different socioeconomic, religious and cultural groups. 18. Compare and contrast the health care needs and expectations of differing cultural and religious and minority groups. 19. Develop an understanding of the relationship between ethnicity and identity.

Class Contact: Forty-eight (48) hours over one 12-week semester comprising four
(4) hours per week of lectures and tutorials.

health sociology. Melbourne.

Assessment: This unit has 3 assessment items: one written essay (1500-
2000 words) (30%); reflective journal / case study of 1500 words based
upon experiences gained during clinical placements (30%); one 2-hour written
examination (40%). To obtain a pass or higher in this graded unit, normally all components of assessment must be passed.

HFB2100 PARAMEDIC PRACTICE 2

Locations: St Albans, Off Campus

Pre-requisites: HFB2103 PARAMEDIC PRACTICE 1; OR EQUIVALENT

Descriptions: This subject continues to develop the students’ understanding and
practice of paramedic emergency management. A problem-oriented approach

emphasizing application of knowledge guides students in trauma management and
systems, environmental emergencies, introductory aeromedicine and major incident
responses within specific medical specialties and out-of-hospital emergencies. Topics
in applied clinical pharmacology will reinforce paramedic emergency management
of patients at home and during emergency medical transport. To build individual and
team skills and strengthen the awareness for individualized care, students will work
with other students to provide supervised student mentoring. Topics in this subject
may be interchanged with HFB2103 Paramedic Practice 1 and HFB2204 Paramedic
Practice 4.

Credit Points: 12

Learning Outcomes: To be advised.

Class Contact: Six hours per week for one semester or off-Campus equivalent,
comprising lectures, tutorials, practical sessions and self-directed learning activities.

Required Reading: To be advised by Lecturer.

Assessment: Proficiency multi-station practical and theory examination (pass/fail
(hurdle requirement); portfolio (50%); examination (50%). To obtain an Ungraded
Pass in the subject, normally all components of assessment must be attempted and
passed. Failed assessment items (multi-station examination and portfolio) may be
re-attempted once only. Proficiency standards must be obtained on any re-attempted
multi-station examination. Maximum possible marks to be obtained on resubmission
of any portfolio will be 50%. Where the final examination is failed, a supplementary
examination will be offered. The maximum possible mark on the supplementary
examination will be 50%. This subject is a hurdle requirement.

HFB2101 PARAMEDIC CLINICAL 2

Locations: St Albans, Online

Pre-requisites: HFB2104 PARAMEDIC CLINICAL 1; OR EQUIVALENT

Descriptions: This subject is designed to facilitate the application of theory and skills
presented in HFB2100 Paramedic Practice 2. Students will participate in the delivery
of health care in selected clinical settings and classroom laboratory practices. The
Clinical focus is on developing paramedic assessment, competency and management of patients in a variety of circumstances.

Credit Points: 12

Learning Outcomes: To be advised.

Class Contact: A minimum of ten (10) hours per week for one semester or equivalent, comprising at least sixty (60) hours clinical placement in the semester (hurdle requirement), lectures, tutorials, practical sessions and self-directed learning activities. Clinical placement needs to be flexible pending available clinical positions in hospitals, other medical facilities and ambulance services. Where possible, students will be notified at the beginning of the semester of their clinical arrangements.

Required Reading: To be advised by Lecturer.

Assessment: To obtain an Ungraded Pass, students must successfully complete the proficiency multi-station practical and theory examination (pass/fail) (hurdle requirement); reflective journal (maximum 1500 words); four case studies; clinical log book; overall satisfactory appraisal from all placements (hurdle requirement). This subject is a hurdle requirement.

HFB2102 FUNDAMENTALS OF PARAMEDICINE 3

Locations: St Albans, On-line,

Pre-requisites: HFB1205 FUNDAMENTALS OF PARAMEDICINE 2; OR EQUIVALENT.

Descriptions: The subject builds on the earlier Fundamentals of Paramedicine 1 and 2, and includes the anatomy and physiology of the lymphatic, digestive, reproductive and urinary systems to illustrate their relationships within a range of common and important acute and chronic illnesses. An overview of human nutrition, metabolism and temperature regulation is included. Topics may be interchanged with those in HFB1101 Fundamentals of Paramedicine 1, HFB1205 Fundamentals of Paramedicine 2 and HFB2206 Fundamentals of Paramedicine 4 subjects. Topics will be related directly to paramedic care of the emergency patient.

Credit Points: 12

Learning Outcomes: To be advised.

Class Contact: Six hours per week for one semester or equivalent, comprising lectures, tutorials, practical sessions and computer-based self-directed learning activities.

Required Reading: To be advised by Lecturer.

Assessment: Online test in two parts (20%); essay (1500 words) (30%); written examination (50%). To obtain at least a Pass in the subject, normally all components of assessment must be attempted and passed. Failed assessment items (online test and essay) may be re-attempted and resubmitted once only. Maximum possible marks to be obtained on any resubmission will be 50%. Where the final examination is failed, a supplementary examination will be offered. The maximum possible mark on the supplementary examination will be 50%.

HFB2114 PARAMEDIC SCIENCE 1

Locations: St Albans,

Pre-requisites: HFB1213 - PARAMEDIC CLINICAL PRACTICE 2RB1211 BIOSCIENCE 2; EQUIVALENTS.

Descriptions: This unit will cover the following topics:
- Trauma systems and mechanism of injury
- Haemorrhage and shock
- Soft tissue trauma
- Burns
- Head and facial trauma
- Spinal trauma
- Thoracic trauma
- Abdominal trauma
- Musculoskeletal trauma.

Credit Points: 12

Learning Outcomes: On successful completion of this unit, it is expected that students will be able to:
- Describe trauma systems in Australia.
- Describe the scope of traumatic injuries and death.
- Discuss the epidemiology of trauma.
- Predict injury patterns based on laws of physics, motion, and transfer of force.
- Describe injury patterns that should be suspected when injury occurs as a result of specific types of trauma.

Haemorrhage and shock:
- Describe signs and symptoms of internal or external injuries.
- Define shock.
- Describe the factors necessary to achieve adequate tissue perfusion and oxygenation.
- Describe the changes in the microcirculation during the progression of shock.
- List and describe the causes and effects of hypovolemic, cardiogenic, neurogenic, anaphylactic, and septic shock.
- Describe the pathophysiology, signs and symptoms associated with the progression through the stages of shock.
• Outline the pre-hospital management of the patient in each type of shock based on pathophysiological findings and discuss how to integrate the assessment and management of the patient in shock.

• Discuss and describe the past and current theories and the underlying pathophysiological principles behind the fluid resuscitation practices for traumatically injured patients.

Soft tissue trauma:
• Describe the pathophysiological responses to soft tissue injury.
• Outline the management principles of pre-hospital care of soft tissue injuries.
• Describe the pre-hospital management of selected soft tissue injuries.
• Discuss the factors that increase the potential for wound injuries.

Burns:
• Describe the incidence, patterns and sources of burn injury.
• Describe the pathophysiological patterns to burn injury.
• Classify burn injury according to depth, extent and severity based on established standards.
• Describe the pre-hospital management of the patient who has established a burn injury.

Head and facial trauma
• Describe the mechanism of injury, assessment and management of:
  - Faccio-maxillary injuries; ear, eye, and dental injuries; neck trauma; scalp, cranium, nerve injury
  - Distinguish between different types of brain injuries based on pathophysiology and assessment findings.
• Outline the pre-hospital management of a patient with a cerebral injury.
• Describe trauma scales used in the pre-hospital setting.

Spinal trauma
• Describe the incidence, morbidity, mortality related to spinal injury.
• Outline the general assessment of a patient with suspected spinal injury.
• Distinguish between certain types of spinal injury.
• Describe pre-hospital assessment of spinal cord injury.
• Identify pre-hospital management with the patient with traumatic and non-traumatic spinal cord injuries.

Thoracic Trauma
• Discuss the factors and mechanism of injury associated with thoracic trauma.
• Describe the mechanism of injury, signs and symptoms and management of skeletal injuries to the chest.
• Describe the mechanism of injury, signs and symptoms and pre-hospital management of pulmonary trauma.
• Describe the mechanism of injury, signs and symptoms, pre-hospital management of injuries to the heart and great vessels; esophageal and tracheobronchial injury; diaphragmatic rupture.

Abdominal trauma
• Describe mechanisms of injury, signs and symptoms, and complications associated with abdominal solid organ, hollow organ and pelvic organ injuries.
• Describe the pre-hospital assessment priorities for a patient suspected of having an abdominal injury.
• Outline the pre-hospital care of a patient with abdominal injury.

Musculoskeletal Injury
• Describe the features of each class of musculoskeletal injury.
• Describe the pre-hospital management principles for selected upper and lower extremity injuries.
• Identify pre-hospital management priorities for open fractures, angular fractures and dislocations.

Class Contact: Forty-eight (48) hours over one 12-week semester comprising of four (4) hours per week of lectures. Self directed learning will be encouraged using the paramedic interactive curriculum and case study.


Assessment: This unit has three assessment items: one 1-hour mid-semester theory examination (30%); one written assignment (2000 words) (30%); one 3-hour end-of-semester theory examination (40%). Knowledge, skills and values developed in this unit will be assessed through group discussion and case-based problem solving exercises. To obtain a pass or higher in this graded unit, normally all components of assessment must be submitted and an aggregate mark of 50% must be attained.

HFB2115 MENTAL HEALTH AND ILLNESS

Locations: St Albans, Victoria.

Pre-requisites: HFB1206 PARAMEDIC SCIENCES 2

Descriptions:
• Definition of mental health.
• The biopsychosocial model.
• Promoting good mental health (including prevention of mental illness).
• How the biopsychosocial model relates to mental health and the mental illnesses of depression, anxiety, substance misuse, bipolar disorder, schizophrenia and dementia (including how psychosocial and lifestyle factors influence mental health).
• Approaching and assessing patients with a behavioural emergency.
• Options for managing a patient with a medical emergency. (Victorian) Ambulance service guidelines and policies related to behavioural emergencies.

Credit Points: 12

Learning Outcomes: On successful completion of this unit, it is expected that students will be able to:
• Describe what is meant by mental health.
• Explain how the biopsychosocial model relates to mental health.
• Elucidate how good mental health may be promoted.
• Use ideas from behavioural and cognitive psychology to explain the behaviours of themselves and others. This will include health destructive and health promoting behaviours.
• Reflect on their own mental health and on that of others.
• Discuss and describe the most prevalent mental disorders in Australia (depression, anxiety, substance misuse, bipolar disorder) and dementia.
• Describe how psychosocial and lifestyle factors influence mental health.
• Explain how ambulance paramedics should approach and assess patients with a behavioural emergency.
• Explore and explain options as to how ambulance paramedics might manage a patient in a behavioural emergency.
• Identify and describe the National and State legislation and ambulance service policies and regulations that apply to patients with a behavioural emergency.
• Integrate this knowledge to participate effectively in relevant role-plays and scenarios.

Class Contact: Forty-eight (48) hours over one 12-week semester.

Required Reading: To be advised by Lecturer.

Assessment: This unit has four assessment items: one individual assignment (500 words) (10%) (I3, W3, A2); one group assignment (500 words) (10%) (I3, W3, A2, C3); one essay plan (10%); one essay (2500 words) (30%) (I3, W3, A2); one examination (40%) (I3, W3, A2). To obtain a pass or higher in this graded unit, normally all components of assessment must be attempted and passed.

HFB2116 PARAMEDIC CLINICAL PRACTICE 3

Locations: St Albans,

Pre-requisites: SATISFACTORY COMPLETION OF YEAR 1 HBPX; OR EQUIVALENT.

Descriptions: This unit will contain:
• Fluid resuscitation
• Haemorrhage control and shock management.
• Assessment and management of soft tissue injuries.
• Assessment and management of burns
• Assessment and management of head and facial trauma.
• Assessment and management of spinal and back injuries
• Assessment and management of thoracic trauma
• Assessment and management of abdominal trauma.

Credit Points: 12

Learning Outcomes: On successful completion of this unit, it is expected that students will be able to:
• Detail and discuss the various types of fluids used in the prehospital setting
• Describe and discuss the indications and contraindications of fluid replacement in the prehospital setting
• Accurately identify patients who would be indicated for fluid replacement therapy.
• Describe and demonstrate the preparation and assembly of an intravenous fluid line.
• Describe and demonstrate the appropriate pre-hospital assessment and management of patients with an external haemorrhage
• Describe and demonstrate the appropriate pre-hospital assessment and management of patients with an internal haemorrhage
• Describe and demonstrate the appropriate pre-hospital assessment and management of patients with a soft tissue injury.
• Describe and demonstrate the appropriate pre-hospital assessment and management of patients with burns.
• Demonstrate the application of the Rule of Nines and Lund and Brower methods of burns surface area assessment.
• Describe and demonstrate the appropriate pre-hospital assessment and management of patients with facial trauma.
• Describe and demonstrate the appropriate pre-hospital assessment and management of patients with a head injury
• Describe and demonstrate the application of a cervical collar.

• Describe and demonstrate the use of appropriate extrication devices for patients presenting with a spinal injury, including spine boards, scoop stretchers, and the KED.
• Describe and demonstrate the appropriate pre-hospital assessment and management of patients with thoracic trauma
• Describe and demonstrate the appropriate procedure for decompression of a tension pneumothorax using a variety of methods.
• Describe and demonstrate the appropriate pre-hospital assessment and management of patients with abdominal injuries.
• Describe and demonstrate the appropriate pre-hospital assessment and management of patients with limb fractures, both complicated and uncomplicated.
• Describe and demonstrate the correct application of various splinting devices, including air splints, vacuum splints, SAM splints, and the Donway and/or HARE traction devices.
• Describe, demonstrate and justify the administration of various pharmacological agents related to the management of traumatic injuries.
• Use reflective strategies to identify opportunities for improvement in clinical reasoning, patient management.

Class Contact: Eighty-eight (88) hours over one 12-week semester comprising four (4) hours per week of practical classes and self-directed learning utilising the Paramedic Interactive Curriculum, and forty (40) hours clinical placement in an appropriate clinical setting during the semester.


Assessment: This unit has three assessment items. Practical skills will be assessed using criterion referenced clinical skills assessment format. Students will be provided clinical skills assessment forms by the end of the second week of semester. Knowledge skills and values developed in this unit will be assessed in final semester examinations, which will be conducted in a scenario-based format. Students are required to satisfactorily complete a clinical logbook and reflective journal whist on clinical placement. To obtain a pass in this graded unit, all components of assessment must be attempted and passed.

HFB2204 PARAMEDIC PRACTICE 3

Locations: St Albans, On-line,

Pre-requisites: HFB2100 - PARAMEDIC PRACTICE 2OR equivalent.

Descriptions: This subject continues develop the students understanding and practice of paramedical emergency management. This subject has been designed to continue the study of knowledge using a problem-orientated approach. The introduction of skill development and knowledge has been specifically integrated to ensure students have an underlying knowledge and then are able to apply skills to a particular situation. The framework of this subject will be based around medical specialties and out of hospital emergencies and will be related to emergency care of the elderly, obstetrics and midwifery, neonatal care, paediatrics, abdominal and reproductive emergencies. Students will be introduced to the principles of applied clinical pharmacology in the form of paramedical guidelines, drug administration, and management of these patients in emergency situations, in the home and during emergency medical transport. Students will also be introduced to clinical instruction and mentoring. To enhance student relationships, students will work with other students providing supervised student mentoring arrangements. The integration of this approach will further facilitate the need for individualised patient care. Topics in this subject may be interchanged with HFB1203 Paramedic Practice 1 or HFB2204 Paramedic Practice 3.Required Reading To be advised by lecturer.

Credit Points: 12
Learning Outcomes: To be advised.

Class Contact: Six hours per week for one semester or equivalent comprising lectures, tutorials, practical sessions and discussion and/or workbooks. Assessment Examination (50%), Portfolio (50%) and mastery exams (pass/fail). Normally to obtain a pass in the subject all components of assessment must be passed. To obtain a pass in the subject all components of assessment must be successfully completed. If resubmission of the assignment or a supplementary examination is required for this subject, the total mark available for the task will be a maximum of 50%, and the overall grade for the subject will be no higher than pass.

Required Reading: To be advised.

Assessment: To be advised.

HFB2205 PARAMEDICAL INTERNSHIP

Locations: St Albans, On-line,
Pre-requisites: HFB2101 PARAMEDIC CLINICAL 2; OR EQUIVALENT.

Descriptions: This subject is designed to build on past clinical subjects and to place the student into actual paramedic practice. The subject aims to make students aware of the expectations of them in pre-hospital environments and acute medical settings. To further develop paramedic skills and an awareness of professional and ethical behaviours, students will be expected to practise primarily in the ambulance environment within selected clinical settings or in supervised classroom laboratory settings. Students will practise patient consultations and clinical practice under supervision. Clinical tutorials and case presentations will emphasize and expand upon clinically relevant material obtained during clinical placement.

Credit Points: 12

Learning Outcomes: To be advised.

Class Contact: A minimum of ten (10) hours per week for one semester or equivalent, comprising at least sixty (60) hours clinical placement in the semester (hurdle requirement), lectures, tutorials, practical sessions and self-directed learning activities. Clinical placement needs to be flexible pending available clinical positions in hospitals, other medical facilities and ambulance services. Where possible, students will be notified at the beginning of the semester of their clinical arrangements.

Required Reading: To be advised by Lecturer.

Assessment: To be advised by Lecturer.

HFB2206 FUNDAMENTALS OF PARAMEDICINE 4

Locations: St Albans, On-line,
Pre-requisites: HFB2102 FUNDAMENTALS OF PARAMEDICINE 3; OR EQUIVALENT.

Descriptions: This subject furthers the understanding of principles and diseases introduced in earlier paramedic subjects. Topics include the anatomy and physiology of the special senses; fluids, electrolytes and acid-base balance; and pregnancy and human development. The impacts of trauma and fluid and electrolytic imbalances on the body and the pathophysiological basis of pain and shock are presented. Fundamental differences between paediatric and adult care are highlighted. Students will study the acute paediatric onset of illnesses affecting the cerebral, respiratory, cardiovascular and other systems. Causes and prevention of paediatric trauma will be introduced and extended into its management in a prehospital setting. Emotional effects on parents, paramedics and bystanders will also be discussed. Topics may be interchangeable with those in HFB1101 Fundamentals of Paramedicine 1, HFB1204 Fundamentals of Paramedicine 2 and HFB2102 Fundamentals of Paramedicine 3. Topics will be related directly to paramedic care of the emergency patient.

Credit Points: 12

Learning Outcomes: To be advised.

Class Contact: Four hours per week for one semester or equivalent, comprising lectures, tutorials, practical sessions and computer-based self-directed learning activities.

Required Reading: To be advised by Lecturer.

Assessment: To be advised.

HFB2217 PARAMEDIC SCIENCE 2

Locations: St Albans,
Pre-requisites: HFB2114 PARAMEDIC SCIENCE 1; OR EQUIVALENT.

Descriptions: This unit will cover the following topics:
- Cardiology and acute coronary syndromes
- Pulmonary emergencies
- Neurological emergencies
- Endocrine emergencies.

Credit Points: 12
FACULTY OF HEALTH, ENGINEERING AND SCIENCE

Learning Outcomes: On successful completion of this unit, it is expected that students will be able to:

Cardiology:
- Identify risk factors and prevention strategies associated with cardiovascular disease
- Discuss electro physiology as it relates to the normal electrical and mechanical events in the cardiac cycle.
- Outline the activity of each component of the electrical conductivity of the heart
- Describe the pathophysiology, signs and symptoms and key assessment findings to distinguish selected cardiovascular disorders, including acute coronary syndromes.
- Describe the pre-hospital management of patients with selected cardiovascular disorders, including acute coronary syndromes.
- Identify appropriate actions to take in the pre-hospital setting to terminate resuscitation.
- Explain the relationship of the electrocardiogram tracing to the electrical activity of the heart.

Pulmonary emergencies:
- Distinguish the pathophysiology of respiratory emergencies related to ventilation, diffusion, and perfusion.
- Describe the causes, complications, signs and symptoms, and pre-hospital management of patients diagnosed with; obstructive airways disease, pneumonia, adult respiratory distress syndrome, pulmonary thrombus embolism, upper respiratory infection, spontaneous pneumothorax, hyperventilation syndrome and lung cancer.

Neurological emergencies:
- Outline pathophysiological changes in the nervous system that may alter cerebral blood flow, cerebral perfusion pressure and intracranial pressure.
- Describe the assessment of a patient with a nervous system disorder.
- Describe the pathophysiology, signs and symptoms, as specific management techniques as each of the following neurological disorders; coma, stroke and intracranial haemorrhage, seizure disorders, headaches, brain neo plasm and brain abscess and degenerative neurological diseases.

Endocrine emergencies:
- Discuss the pathophysiologial bases for key signs and symptoms, patient assessment, and patient management for; diabetes and diabetic emergencies such as hypoglycaemia, diabetic ketoacidosis, and hyper-osmolar hyperglycaemic nonketotic coma.
- Discuss the pathophysiological bases for key signs and symptoms, patient assessment and patient management for disorders of the thyroid gland.
- Discuss the pathophysiological bases for key signs and symptoms, patient assessment and patient management of Cushing syndrome and Addison disease.

Class Contact: Forty-eight (48) hours over one 12-week semester comprising four (4) hours per week of lectures. Self directed learning will be encouraged using the paramedic interactive curriculum and case study.


Assessment: This unit has three assessment items: one 1-hour mid-semester theory examination (30%); one written assignment (2000 words) (30%); one 3-hour end-of-semester theory examination (40%). To obtain a pass or higher in this graded unit, normally all components of assessment must be attempted and an aggregate mark of 50% must be attained.

HFB2219 SPECIAL POPULATIONS

Locations: St Albans,

Pre-requisites: HFB2114 PARAMEDIC SCIENCE 1; OR EQUIVALENT.

Descriptions: This unit will cover the following topics:
- Urology and Urinary disorders
- Haematological disorders
- Gynaecology and genealogical disorders
- Obstetrics
- Geriatrics
- Paediatrics.

Credit Points: 12

Learning Outcomes: On successful completion of this unit, it is expected that students will be able to:

Urology and urinary disorders:
- Describe the pathophysiology, signs and symptoms, and pre-hospital management of the patient with urinary retention, urinary tract infections, pyelonephritis and urinary calculi.
- Distinguish between acute and chronic renal failure.
- Discuss general pre-hospital management for the patient with a urinary disorder.

Haematological disorders:
- Discuss the pathophysiology and signs and symptoms of haematological disorders including; anaemia, haemophilia, Hodgkins disease, Lymphoma, Polycythaemia, sickle cell disease.

Gynaecological disorders:
- Describe the pathophysiology of selected non-traumatic causes of abdominal pain in females; pelvic inflammatory disease, ruptured ovarian cyst, cystitis, dysmenorrhea, endometriosis, ectopic pregnancy, and vaginal bleeding.
- Describe the pathophysiology of selected traumatic causes of abdominal pain in females, vaginal bleeding and sexual assault.
- Outline specific management and treatment of the patient who has been sexually assaulted.
- Describe specific pre-hospital measures to preserve evidence in sexual assault cases.

Obstetrics:
- Describe the organisation and function of the specialised structures of pregnancy.
- Outline embryonic and foetal development from ovulation to birth.
- Explain normal maternal physiological changes that occur during pregnancy and how the influence pre-hospital patient care and transportation.
- Describe appropriate information to be elicited during the obstetrical patients history.
- Describe specific techniques for assessment of the pregnant patient.
- Describe the assessment and management of the pregnant patient in the pre-hospital setting.
- Discuss the implications of pre-hospital care in the specific obstetric emergencies including; trauma to the foetus and mother, pre-eclampsia, eclampsia, and vaginal bleeding in pregnancy.
- Outline the physiological changes that occur during labour.
Geriatrics:
- Explain the physiology of the aging process as it relates to major body systems and hemostasis;
- Describe general principles specific to older adults;
- Describe the pathophysiology, assessment and management of specific illnesses in geriatric patients;
- Discuss pre-hospital assessment and management of depression and suicide in the older adult;
- Discuss effects of drug toxicity in the older adult;
- Describe the epidemiology, assessment and management of trauma, environmental emergencies and abuse in the geriatric patients;

Paediatrics
- Describe general principles specific to paediatrics;
- Describe the pathophysiology, assessment and management of specific illnesses in paediatric patients;
- Describe the pathophysiology, assessment and management of traumatic injuries and shock in paediatric patients;
- Discuss and describe the psychosocial and pathophysiological aspects of non-accidental trauma;
- Discuss and describe the psychosocial and pathophysiological aspects of SIDS.

Class Contact: Forty-eight (48) hours over one 12-week semester comprising four (4) hours per week of lectures. Self directed learning will be encouraged using the Paramedic Interactive Curriculum and case study.


Assessment: This unit has two assessment items: one written assignment (3000 words) (50%); one 3-hour end-of-semester theory examination (50%). Knowledge, skills and values developed in this unit will be assessed through group discussion and case-based problem solving exercises. To obtain a pass or higher in this graded unit, normally all components of assessment must be submitted and an aggregate mark of 50% must be attained.

HFB2220 PARAMEDIC CLINICAL PRACTICE 4

Locations: St Albans,
Pre-requisites: HFB2114 PARAMEDIC SCIENCE 1, HFB2116 PARAMEDICINE CLINICAL PRACTICE 3, OR EQUIVALENT.

Descriptions: This unit will contain:
- Cardiovascular emergencies, including the acute coronary syndromes
- Respiratory emergencies
- Neurological emergencies
- Endocrine emergencies
- Female reproductive system emergencies
- Practical childbirth
- Care of the neonate and paediatric
- Management of the pre and postpartum patient

Credit Points: 12

Learning Outcomes: On successful completion of this unit, students are expected to be able to:
- Describe and demonstrate the appropriate pre-hospital assessment and management of patients presenting with selected cardiovascular disorders, including the acute coronary syndromes;
- Demonstrate the correct application and usage of a variety of cardiac monitoring devices;
- Demonstrate the systematic analysis of a three lead ECG rhythm strip;
- Describe and demonstrate the appropriate pre-hospital assessment and management of patients presenting various respiratory disorders;
- Describe and demonstrate the appropriate pre-hospital assessment and management of patients with both acute and chronic neurological disorders;
- Describe and demonstrate the appropriate pre-hospital assessment and management of patients with an endocrine emergency;
- Describe, demonstrate and justify the administration of various pharmacological agents related to the management of cardiovascular, respiratory, neurological and endocrine disorders;
- Describe and demonstrate the appropriate pre-hospital assessment and management of female patients with reproductive emergencies;
- Demonstrate, in a simulated environment, the successful delivery of a child, in a variety of presentations;
- Describe and demonstrate management of the neonate, including the correct application of the Apgar score post delivery;
- Describe and demonstrate management of the neonate, including the correct application of the Apgar score post delivery;
- Use reflective strategies to identify opportunities for improvement in clinical reasoning, patient management.

Class Contact: Eighty-eight (88) hours over one 12-week semester comprising four (4) hours per week of practical classes and self-directed learning utilising the Paramedic Interactive Curriculum, and forty (40) hours clinical placement in an appropriate clinical setting during the semester.


Assessment: This unit has three assessment items. Practical skills will be assessed using criterion referenced clinical skills assessment format. Students will be provided clinical skills assessment forms by the end of the second week of semester. Knowledge skills and values developed in this unit will be assessed in final semester examinations, which will be conducted in a scenario-based format. Students are required to satisfactorily complete a clinical logbook and reflective journal whilst on clinical placement. To obtain a pass in this ungraded unit, all components of assessment must be attempted and passed.

HFB3111 PROFESSIONAL BASIS OF PARAMEDIC PRACTICE 1

Locations: St Albans, On-line,
Pre-requisites: Successful completion of Years One and Two of HBPX: or equivalent.

Descriptions: This subject challenges students to analyse their present practice by examining the principles of intervention for the acutely ill or injured person. An integral part of this subject will be the development of students’ health assessment and practice skills necessary to care for the acutely ill or injured person and the adoption of those skills to improve and extend current practice. Integration of material from basic and paramedic sciences, applied clinical sciences, paramedic clinical practice and professional issues will be incorporated throughout the subject.
Credit Points: 12

Learning Outcomes: To be advised.

Class Contact: Four hours per week for one semester comprising lectures, tutorials, practicals and self-directed learning activities or online equivalents.

Required Reading: To be advised by Lecturer.

Assessment: Portfolio (100%) To obtain at least a Pass in the subject, normally the assessment task must be attempted and passed. If the assessment item is failed, it may be re-attempted and resubmitted once only. Maximum possible marks to be obtained on any resubmission will be 50%.

HFB3121 ADVANCED PARAMEDIC PRACTICE 1

Locations: St Albans, On-line, Internet

Pre-requisites: SATISFACTORY COMPLETION OF YEAR 2 HBPX; OR EQUIVALENT.

Descriptions: This unit will cover the following topics:

- Cardiology
- Advanced airway management
- Allergies and anaphylaxis.

Credit Points: 12

Learning Outcomes: On successful completion of this unit, it is expected that students will be able to:

Cardiology:

- Correlate pathophysiological concepts and assessment findings when patients experience acute health emergencies relating to alterations in perfusion and oxygenation.
- Select and use diagnostic tests that aim to support or validate hypotheses regarding the health emergency.
- Outline the appropriate assessment of a patient who may be experiencing a cardiovascular disorder.
- Describe ECG monitoring techniques that permit electrocardiogram interpretation.
- Describe the sequence of steps in electrocardiogram interpretation.
- When shown an electrocardiogram tracing, identify the rhythm, site of origin, possible causes, clinical significance, and pre-hospital management.
- Identify dysrhythmias of the-originating in the sinus node, atria, atrioventricular junction, atrioventricular blocks, ventricular, bundle branch and fascicular blocks.
- Describe the pre-hospital assessment and management of patients with selected cardiovascular disorders based on knowledge of the pathophysiology of the illness.
- List indications, contraindications, and pre-hospital considerations when using selected cardiovascular interventions including: manual cardioversion, synchronised cardioversion, transcutaneous cardiac pacing, thrombolytic and reperfusion therapies, implanted defibrillation devices and cardiac marker assay.
- Describe the method for taking 12-lead electrocardiogram tracings.
- Analyse and interpret 12-lead electrocardiograms.
- Integrate 12-lead electrocardiogram analysis and interpretation to determine appropriate pre-hospital assessment and management of the patient with a suspected acute myocardial infarction.
- List indications, contraindications, dose, precautions, adverse effects, mechanism of action of pharmacological agents used to manage cardiovascular disorders.
- Identify appropriate actions to take in the pre-hospital setting to terminate resuscitation.

Airway Management and Ventilation:

- Discuss the assessment and management of medical or traumatic obstruction of the airway.
- Describe the indications, contraindications, complications, pre-hospital precautions for advanced pre-hospital airway management and protection including: tracheal intubation, rapid sequence induction, needle cricothyroidotomy, cricothyroidotomy, lighted stylet intubation, nasoantral intubation, orogastric intubation, and mechanical and transport ventilation.
- Demonstrate the correct and appropriate use of advanced pre-hospital airway management and protection including; tracheal intubation, rapid sequence induction, needle cricothyroidotomy, cricothyroidotomy, lighted stylet intubation, nasoantral intubation, orogastric intubation, and mechanical and transport ventilation.
- Demonstrate the correct and appropriate use of advanced ventilation-perfusion diagnostic technology including pulse oximetry, end-tidal carbon monoxide detection, and peak flow testing.
- Describe and demonstrate knowledge and skills for the administration of pharmacological agents of sedation and paralysis.

Allergies and Anaphylaxis:

- Describe the antigen anti body response
- Differentiate between an allergic reaction and a normal immune response.
- Describe signs and symptoms and management of local allergic reactions based on an understanding of the pathophysiology associated with this condition.
- Identify allergens associated with anaphylaxis
- Describe the pathophysiology, signs and symptoms, and management of anaphylaxis

Class Contact: Forty-eight (48) hours over one 12-week semester comprising four (4) hours per week: 2 hours on-line lecturers per week and 2 hours on-line tutorials per week.


Assessment: This unit has three assessment items: one 1-hour mid-semester theory examination (30%); one written assignment (2000 words) (30%); one 3-hour end-of-semester theory examination (40%). Knowledge, skills and values developed in this unit will be assessed through group discussion and case-based problem solving exercises. To obtain a pass or higher in this graded unit, normally all components of assessment must be submitted and an aggregate mark of 50% must be attained.

HFB3122 PROFESSIONAL BASIS OF PARAMEDIC PRACTICE 2

Locations: St Albans, On-line,

Pre-requisites: Successful completion of Years One and Two of HBPX; or equivalent.

Descriptions: This subject challenges students to analyse their present practice by examining the principles of intervention for the acutely ill or injured person. An integral part of this subject is the development of students’ understanding of electrocardiography and pharmacology, and their ability to apply principles in electrocardiography and pharmacology to their present practice. Integration of material from basic and paramedic sciences, applied clinical sciences, paramedic clinical practice and professional issues will be incorporated throughout this subject.

Credit Points: 12

Learning Outcomes: To be advised.
Four hours per week for one semester comprising lectures, tutorials, practicals and self-directed learning activities or online equivalents.

**Required Reading:** To be advised by Lecturer.

**Assessment:** Portfolio including contribution to online discussions (500-800 words each) (100%). To obtain at least a Pass in the subject, normally the assessment task must be attempted and passed. If the assessment item is failed, it may be re-attempted and resubmitted once only. Maximum possible marks to be obtained on any resubmission will be 50%.

**HFB3123 ADVANCED PHARMACOLOGY**

**Locations:** St Albans, On-line, Internet

**Pre-requisites:** HFB1213 - PARAMEDIC CLINICAL PRACTICE 2 OR EQUIVALENTS.

**Descriptions:** This unit will cover the following topics:
- Adrenergic and cholinergic pharmacology
- Histamine and antihistamine agents
- Antipsychotic drugs
- Anxiolytics, hypnotics, and antidepressant drugs
- Anticonvulsants, and muscle relaxants
- Narcotic analgesics and antagonists
- Anti-inflammatory, antipyretic, and analgesic drugs
- Local anaesthesia
- Antiarrhythmic and anginal drugs
- Antihypertensive drugs
- Anticoagulant, fibrinolytic and anti-platelet agents
- Diuretic agents
- Bronchodilators and respiratory agents
- Antiemetic agents

**Credit Points:** 12

**Learning Outcomes:** On successful completion of this unit, it is expected that students will be able to:
- Describe the clinical indications for, adverse effects of adrenergic and cholinergic agonists and antagonists.
- Describe the distribution and function of selected drug group receptors.
- Discuss the indications, uses, mechanisms of action contraindications and adverse effects of narcotics analgesics and non-narcotic analgesics.
- Discuss the indications, uses, mechanisms of action contraindications and adverse effects of selected cardiovascular drugs.
- Discuss the indications, uses, mechanisms of action contraindications and adverse effects of selected drugs that act on the respiratory system.
- Discuss the indications, uses, mechanisms of action contraindications and adverse effects of selected local anaesthetic drugs.
- Understand the role of prostaglandins in the inflammatory response.
- Contrast the actions of depolarising and non-depolarising neuromuscular blocking agents.
- State the rationale for the use of neuromuscular blocking agents in anaesthesia.
- Identify suitable agents for rapid sequence induction.
- Describe the actions of selected drugs used to treat heart failure.
- Discuss the indications, uses, mechanisms of action contraindications and adverse effects of anti-convulsant agents.
- Discuss the indications, uses, mechanisms of action contraindications and adverse effects of antipyschotics, anti-inflammatory and analgesic drugs.
- Discuss the indications, uses, mechanisms of action contraindications and adverse effects of fluids and blood products in the treatment of cardiovascular instability.
- Discuss the indications, uses, mechanisms of action contraindications and adverse effects of selected anti-emetic agents.
- Discuss the indications, uses, mechanisms of action contraindications and adverse effects of selected anti-biotic, anti-viral and anti-microbial agents.

**HFB3124 PRACTITIONER HEALTH 3**

**Locations:** St Albans, On-line, Internet

**Pre-requisites:** HFB2115 - MENTAL HEALTH AND ILLNESSHFB2118 PRACTITIONER HEALTH 2; OR EQUIVALENTS.

**Descriptions:** Biopsychosocial model of health. Concept of social capital and how it relates to the biopsychosocial model of health. How the biopsychosocial model of health can be utilized to discuss and understand mental health issues. Mental health profile of ambulance paramedics and the Australian population. Managing the effects of shiftwork on sleep. Mental health issues of concern to the ambulance industry. Suicide. Stress processes and how the stress process might be managed.

**Credit Points:** 12

**Learning Outcomes:** On successful completion of this unit, it is expected that students will be able to:
- Describe the biopsychosocial model of health.
- Explain the concept of social capital and how it relates to the biopsychosocial model of health.
- Describe the mental health profile of people working in the ambulance industry.
- Compare the mental health profile of people working in the ambulance industry with that of the general Australian population.
- Explain the effects of shiftwork on sleep.
- Integrate concepts and techniques drawn from cognitive-behavioural psychology to improve sleep.
- Identify the mental health disorders of concern to the ambulance industry (including depression, anxiety and substance misuse).
- Integrate knowledge of the biopsychosocial model of health with ways of describing and dealing with mental health issues.
• Discuss concerns about suicide.
• Develop an understanding of the stress process and techniques or tactics for dealing with stress including those used by ambulance paramedics.

**Class Contact:** Forty-eight (48) hours over one 12-week semester comprising lectures, group discussions and small group work.

**Required Reading:** There are no books published that deal specifically or exclusively with the issue of paramedic mental health. Calatibiano, M., L., Byrne, D., Martin, P. R., & Sarafino, E. P. (2002). Health psychology: Biopsychosocial interactions on an Australian perspective. Milton, QLD: John Wiley & Sons Australia. Sanders, M. J. (2005). Mosby’s paramedic textbook (3rd ed.). St Louis, MO: Mosby. (Chapter 2: The Well-Being of the Paramedic). Students will be provided with relevant readings (primarily via WebCT)

**Assessment:** This unit has two assessment items: three written assignments (max 1000 words each) (20% each; 60% total); one 2-hour (time-locked online) MCQ test (40%) (A2, C3, I3, O2, P2, W2). To obtain a pass or higher in this graded unit, normally all components of assessment must be submitted and passed.

**HFB3125 RESEARCH IN PARAMEDIC PRACTICE**

**Locations:** St Albans, On-line,

**Pre-requisites:** HFB2220 - PARAMEDIC CLINICAL PRACTICE 4OR EQUIVALENT.


**Credit Points:** 12

**Learning Outcomes:** On successful completion of this unit, it is expected that students will be able to:

• Understand basic research methodology and terminology;
• Describe the main differences between qualitative and quantitative research;
• Discuss the advantages and disadvantages of the different methodologies;
• Have a beginning level of understanding of research design, establishing the rigour of a research process, methods of data collection and analysis and reporting on research data;
• Retrieve appropriate articles for a literature review;
• Conduct an in-depth critical appraisal of research articles;
• Recognise the significance of consent, confidentiality and other ethical considerations in relation to research.

**Class Contact:** Forty-eight (48) hours over one 12-week semester comprising four (4) hours per week. 2 hours on-line lectures per week and 2 hours on-line tutorials per week.


**Assessment:** This unit has three assessment items: two critical appraisal exercise (1000 words each) (20% each; 40% in total); one research proposal (2500 words) (20%); one 2-hour online examination (40%). To obtain a pass or higher in this graded unit, all components of assessment must be passed.

**HFB3222 INTEGRATION OF PARAMEDIC PRACTICE 2**

**Locations:** St Albans, On-line,

**Pre-requisites:** RESTRICTED TO STUDENTS ENROLLED IN THE BACHELOR OF HEALTH SCIENCE - PARAMEDIC (1 YEAR CONVERSION) DEGREE COURSE.

**Descriptions:** This subject re-introduces and extends the fundamentals of paramedicine. A systems approach reinforces the anatomical, physiological, pathophysiological and pharmacological aspects of care from the perspectives of the paramedic. Applied considerations will be given to a range of adult and paediatric emergencies.

**Credit Points:** 12

**Learning Outcomes:** To be advised.

**Class Contact:** Four hours per week for one semester comprising lectures and self-directed learning activities or online equivalent.

**Required Reading:** To be advised by Lecturer.

**Assessment:** Essay (1500 words) (25%); weekly online activities including contributions to online discussions (15%); final online examination of multiple-choice questions only (60%). To obtain at least a Pass in the subject, normally all components of assessment must be attempted and passed. Failed assessment items (essay and weekly activities) may be re-attempted and resubmitted once only. Maximum possible marks to be obtained on any resubmission will be 50%. Where the final examination is failed, a supplementary examination will be offered. The maximum possible mark on the supplementary examination will be 50%.

**HFB3226 MAJOR INCIDENTS**

**Locations:** St Albans, On-line,

**Pre-requisites:** HFB3121 - ADVANCED PARAMEDIC PRACTICE 1 OR EQUIVALENT.

**Descriptions:** This unit will cover:

• The history of major incidents
• Principals of major incident planning, preparation, response and recovery
• The role and responsibilities of emergency services in the event of a major incident
• The roles and responsibilities of ambulance and medical services in the event of a major incident
• Communications
• Major incident medical management-command and control, the Incident Command System.
• Major incident management, treatment, transport
• Sociological and psychological impacts of major incidents
Credit Points: 12

Learning Outcomes: On successful completion of this unit, it is expected that students will be able to:

- Define a major incident;
- Describe traditional disaster threats including natural phenomena such as floods, cyclones, earth quakes, tsunamis, fires, landslides, volcanic eruptions, and drought;
- Describe new disaster threats including, wars, social violence, terrorism, civil unrest, epidemics and chemical and nuclear incidents or warfare;
- Discuss the principles of risk assessment and major accidents planning, preparation, and coordination;
- Discuss the main elements of the national major incident and disaster policy;
- Describe the emergency services response to a major incident including police, fire, ambulance, health, state emergency service and other support agencies;
- Discuss the importance of a multi disciplinary response to a major incident;
- Discuss medical service major incident planning, preparation, response and recovery;
- Discuss and demonstrate principals of good communication at major incident;
- Develop and describe reasons for poor communication at major incidents;
- Demonstrate effective communications during a major incident simulation;
- Discuss the role of the media at a major incident;
- Discuss the principals of major incident management including principals of command and control and the Incident Command System (ICS);
- Discuss major incident management and treatment;
- Define triage;
- Describe and discuss the evolution of modern triage principles, the aims of triage and triage priorities;
- Demonstrate correct application of triage and treatment principals during a major incident simulation;
- Describe the organisation and types of transportation used at a major incident;
- Discuss and describe the major physiological and sociological effects following a major incident including survival, bereavement, and post traumatic stress.
- Define a major incident;
- The process of documentation associated with clinical decision making in pre-hospital care.
- Understand the decision making process as it applies to diagnostic reasoning in pre-hospital care.

Class Contact: Forty-eight (48) hours over one 12-week semester comprising four (4) hours per week: 2 hours on-line lectures per week and 2 hours on-line tutorials per week.


Assessment: This unit has four assessment items: one written assignment (3000 words each) (40%); one 1 hour written examination (20%); one triage and radio communications practical assessment (20%); one written report on the emergency management plans in the student’s local area (1000 words) (20%). To obtain a pass or higher in this graded unit, all components of assessment must be attempted and passed. Failed assessments may be re-attempted and re-submitted once only. Maximum possible marks to be obtained on any re-submission will be 50%.

HFB3227 PARAMEDIC EVIDENCE BASED HEALTH CARE

Locations: St Albans, On-line,
Pre-requisites: HFB3125 - RESEARCH IN PARAMEDIC PRACTICE OR EQUIVALENT.
Descriptions: This unit will cover:

- Principles of evidence based practice
- Hierarchies of evidence
- Assessing the methodological quality of evidence
- Critical incidents associated with the decision making process
- Implementing evidence based findings
- Critical incidents associated with the decision making process
- The process of documentation associated with clinical decision making in pre-hospital care.
- Critique of current protocol systems within the context of the clinical decision making process.

Credit Points: 12

Learning Outcomes: On successful completion of this unit, it is expected that students will be able to:

- Apply the skills and knowledge of evidenced based health care acquired in this unit to evaluate their work as a paramedic.
- Critically examine current protocol systems and how they inhibit, support and or constrain the clinical decision making process
- Apply knowledge, skills and values, which will enable them to reflect their opinion and practice of pre-hospital care.
- Understand the decision making process as it applies to diagnostic reasoning in pre-hospital care.

Class Contact: Forty-eight (48) hours over one 12-week semester comprising of three (3) hours per week delivered as lectures and one (1) hour per week as tutorials.


Assessment: This unit has two assessment items: two written assignments (3000 words each) (50% each, 100% total). To obtain a pass or higher in this graded unit, all components of assessment must be attempted and passed. Failed assessments may be re-attempted and re-submitted once only. Maximum possible marks to be obtained on any re-submission will be 50%.

HFB3228 ADVANCED PARAMEDIC PRACTICE 2

Locations: St Albans, On-line,
Pre-requisites: HFB3121 - ADVANCED PARAMEDIC PRACTICE 1 OR EQUIVALENT.
Descriptions: This unit will cover the following topics:

- Review and revision of the pathophysiology and pre-hospital management of selected medical and trauma conditions including:
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- Cardiovascular emergencies
- Pulmonary emergencies
- Neurological emergencies
- Brain trauma
- Toxicological emergencies
- Multi-trauma
- Urinary emergencies
- The immune compromise patient
- Burns and electrical injuries
- Chest and abdominal trauma
- The role of diagnostic testing: x-ray, computed tomography (CT scan), magnetic resonance imaging (MRI), ultrasound, angiography, biochemistry, haematology and microbiology/pathology.

Learning outcomes:

- Demonstrate advanced clinical decision making skills and apply knowledge of pathophysiology of selected conditions to pre-hospital simulation situations.
- Describe and demonstrate the correct application of a variety of wound management techniques including, suturing, wound debridement, eschiotomy, fasciotomy and lancing;
- Describe and demonstrate the correct application of a variety of physiotherapeutic techniques including, strapping, extended sprain and strain care, therapeutic massage, therapeutic ultrasound, and dislocation reduction;
- Demonstrate, through active participation in a variety of clinical settings, an understanding of the integration of health care practices in order to provide extended patient care for the sick and injured patient;
- Use reflective strategies to identify opportunities for improvement in clinical reasoning, patient management.

Class Contact: Eighty-eight (88) hours over one 12-week semester comprising two (2) hours per week of practical classes and self-directed learning utilising the Paramedic Interactive Curriculum, and sixty-four (64) hours clinical placement in an appropriate clinical setting during the semester.


Assessment: This unit has three assessment items. Practical skills will be assessed using criterion referenced clinical skills assessment format. Students will be provided clinical skills assessment forms by the end of the second week of semester. Knowledge skills and values developed in this unit will be assessed in final semester examinations, which will be conducted in a scenario-based format. Students are required to satisfactorily complete a clinical logbook and reflective journal whilst on clinical placement. To obtain a pass in this ungraded unit, all components of assessment must be attempted and passed.

HFB3301 ISSUES IN PREHOSPITAL HEALTH SERVICE DELIVERY

Locations: St Albans, On-line,

Pre-requisites: Successful completion of Years One and Two of HBPX: or EQUIVALENT.

Descriptions: This subject introduces students to a range of key concepts that influence health service delivery in out-of-hospital practice. Students will relate to their own perspectives and experiences in order to explore and analyse the many roles of the paramedic in health service delivery.

Credit Points: 12

Learning Outcomes: To be advised.
Class Contact: Three hours per week for one semester comprising lectures, tutorials, practicals and self-directed learning activities or online equivalents.

Required Reading: To be advised by Lecturer.

Assessment: Portfolio (100%). To obtain at least a Pass in the subject, normally the assessment task must be attempted and passed. If the assessment item is failed, it may be re-attempted and resubmitted once only. Maximum possible marks to be obtained on any resubmission will be 50%.

HFB3401 PREHOSPITAL ETHICAL AND LEGAL ISSUES

Locations: St Albans, On-line, Off Campus

Pre-requisites: Prerequisites apply. Please see Paramedic Science Course Coordinator for details.

Descriptions: This unit enables students to explore ethical and legal issues and their implications for paramedics and paramedic science. Students’ experiences will be drawn upon to demonstrate and scrutinise their responses to common situations that occur in paramedic practice, which may cause ethical and legal dilemmas.

Credit Points: 12

Learning Outcomes: On successful completion of this unit, students are expected to be able to:

• Define the terminology and abbreviations used in ethics and law;
• Locate and comment on statutes relevant to paramedic science;
• Discuss how ethical and legal practices and issues may influence paramedic practice;
• Describe various ethical and legal principles and processes within the health care system.

Class Contact: Four hours per week for one semester comprising lectures, tutorials, practicals and self-directed learning activities or online equivalents.


Assessment: In order to obtain a pass or higher in this graded unit, normally all components of assessment must be passed. If the assessment item is failed, it may be resubmitted once only. Maximum possible marks to be obtained on any resubmission will be 50%. Portfolio One portfolio 50%

HFB3700 PARAMEDIC INSTRUCTION AND MENTORING

Locations: St Albans, On-line,

Pre-requisites: Prerequisites apply. Please see Paramedic Science Course Coordinator for details

Descriptions: The development and extension of clinic management skills, observation of treatments and supervised provision of limited client care. Contributions to and partial leading of case discussions. Assistance to more senior students and administrative staff by providing clerical and clinical reception and treatment room support in clinics. This unit requires attendance at University campus clinics, external clinics and field events to observe treatments by senior students and clinicians.

Credit Points: 12

Learning Outcomes: On successful completion of this unit, students are expected to be able to:

• Discuss the role of the clinical educator;
• Identify the needs of the learner;
• Describe factors that influence learning;
• Develop clinical instructor programs;
• Deliver clinical instructor programs;
• Explain concepts and theories of assessment and evaluation;
• Evaluate a clinical instruction program.

Class Contact: Three hours per week or equivalent for one semester comprising lectures, tutorials, practicals and self-directed learning activities or online equivalents.


Assessment: Negotiated written report or portfolio (100%). To obtain at least a Pass in the subject, normally the negotiated assessment task must be attempted and passed. If the assessment item is failed, it may be re-attempted and resubmitted once only. Maximum possible marks to be obtained on any resubmission will be 50%.

HFB3501 RESEARCH IN PARAMEDIC PRACTICE

Locations: St Albans, On-line, Off Campus

Pre-requisites: Prerequisites apply. Please see Paramedic Science Course Coordinator for details.

Descriptions: This unit investigates major research considerations and focuses on facilitating the students’ abilities to critically analyse research reports. Emphasis is placed on the application of research findings to paramedic practice and ways in which applications can be facilitated.

Credit Points: 12

Learning Outcomes: On successful completion of this unit, students are expected to be able to:

• Describe basic research methodology and terminology;
• Describe the main differences between qualitative and quantitative research;
• Discuss the advantages and disadvantages of the different methodologies;
• Explain at a beginning level of understanding, research design, the rigour of a research process, methods of data collection and analysis of and reporting on research data;
• Retrieve appropriate articles for a literature review;
• Conduct an in-depth critical appraisal of research articles;
• Recognise the significance of consent, confidentiality and other ethical considerations in relation to research.

Class Contact: Four hours per week for one semester comprising lectures, tutorials, practicals and self-directed learning activities or online equivalents.


Assessment: Other One 1 hour online quiz 10% In order to obtain a pass or higher in this graded unit, normally all components of assessment must be passed. If the assessment item is failed, it may be resubmitted once only. Maximum possible marks to be obtained on any resubmission will be 50%.

HFB3800 PARAMEDIC PROFESSIONAL WRITING

Locations: St Albans, On-line,

Pre-requisites: To be advised.

Descriptions: This subject will introduce students to the practice of developing a paramedic body of knowledge through professional writing. Students will rely on their professional experience and the professional literature to produce a paper (or
series of papers) suitable for submission to a refereed professional journal. Students will use publication guidelines and instructions to authors in paramedic or other suitable journals and will be assisted in the development of their journal paper(s). Emphasis will be on extending the students’ critical appraisal, synthesis and higher order cognitive skills when developing their professional writing skills.

Credit Points: 12

Learning Outcomes: To be advised

Class Contact: Three hours per week for one semester comprising lectures, tutorials, practicals and self-directed learning activities or online equivalents.

Required Reading: To be advised by Lecturer.

Assessment: Participation in on-line discussion as specified at the beginning of the semester (hurdle requirement); one written task (2000 words) (40%); one written task (2500 words) (60%).

HFB3900 EMERGENCY MEDICAL SERVICES MANAGEMENT (ELECTIVE)

Locations: St Albans, Online,

Pre-requisites: Successful completion of Years One and Two of HBPX: or equivalent.

Descriptions: This subject examines two organizational areas (practices and functioning of organisations, and theories and models of organisational structure, policy and decision making) and how they relate to emergency medical services (EMS). Emphasis is on an individual within EMS organisational settings and the critical value of structure, policy and decision making to the organisation. Topics covered in the first area include personality, social perception, group dynamics, motivation and specific personal behaviour management issues such as stress management, conflict resolution and career management strategies. Topics in the second area include the nature of strategic planning, analysis of the environment, planning directions, strategy formulation and implementation, and global strategic management and future directions.

Credit Points: 8

Learning Outcomes: To be advised.

Class Contact: Three hours per week for one semester comprising lectures, tutorials, practicals and self-directed learning activities or online equivalents.

Required Reading: To be advised by Lecturer.

Assessment: Portfolio (100%). To obtain at least a Pass in the subject, normally the assessment task must be attempted and passed. If the assessment item is failed, it may be re-attempted and resubmitted once only. Maximum possible marks to be obtained on any resubmission will be 50%.

HHA1171 ANATOMY 1

Locations: City Flinders,

Pre-requisites: Nil.

Descriptions: Topics include definitions of anatomical terms; arthrology, osteology, angiology and myology; the somatic nervous system; autonomic nervous system; anatomy of the back, abdomen and thorax; respiratory muscles; the neck; the upper limb and clinical applications of musculoskeletal anatomy.

Credit Points: 12

Learning Outcomes: On successful completion of this unit, students are expected to be able to:

- Use anatomical language correctly to describe anatomical structures, planes and motions of the musculoskeletal system of the upper body;
- Identify and describe the bones, muscles, joints, vessels and nerves of the upper body; including the upper limb, spine, back, thorax, abdominal wall, and external head and neck;
- Identify the key anatomical structures and spaces of the upper limb, spine, back, thorax, abdomen, and pelvis on models and cadaveric specimens;
- Describe and define the somatic and autonomic nervous systems, and anatomical spaces of the upper limb, spine, back, thorax, abdominal wall and external head and neck;
- Describe and demonstrate using cadaveric specimens the anatomical spaces and pathways of vessels and nerves of the upper limb, spine, back, thorax, abdominal wall and external head and neck;
- Briefly comment on the clinical relevance of the key anatomical features of the upper body;
- Demonstrate attributes of anatomical problem solving and clinical reasoning.

HHA1272 ANATOMY 2

Locations: City Flinders,

Pre-requisites: HHA1171 - ANATOMY 1 or equivalents.

Descriptions: Topics include definitions of anatomical terms; arthrology, osteology, angiology and myology; the somatic nervous system; autonomic nervous system; anatomy of the back, abdomen and inguinal regions; the pelvis; the lower limb; clinical applications of musculoskeletal anatomy.

Credit Points: 12

Learning Outcomes: On successful completion of this unit, students are expected to be able to:

- Use anatomical language correctly to describe anatomical structures and planes and motions of the musculoskeletal system of the lower body;
- Identify, name, and describe, the bones, muscles, ligaments, connective tissue structures, vessels, and nerves of the lower limb, thorax, abdomen, inguinal region and pelvis;
- Identify the key anatomical structures and spaces of the lower body, thorax, abdomen, inguinal region and pelvis on models and cadaveric specimens;
- Describe and define the somatic and autonomic nervous systems, and anatomical spaces of the lower limb, thorax, abdomen, inguinal region and pelvis;
- Describe and demonstrate using cadaveric specimens the anatomical spaces and pathways of vessels and nerves of the lower limb, thorax, abdomen, inguinal region and pelvis;
- Briefly comment on the clinical relevance of the key anatomical features of the lower body;
- Demonstrate attributes in anatomical problem solving and clinical reasoning.
Learning Outcomes: On successful completion of this unit, students are expected to be able to:

- Identify, name and describe anatomical structures within the abdomen and pelvis, including the fascia and nervous, vascular and lymphatic systems, from regional perspectives;
- Describe the developmental processes and histology of all the major systems in the abdomen and pelvis, including the gastrointestinal, reproductive, urgenital systems;
- Communicate knowledge of the anatomy of the abdomen and pelvis (including bones, vessels, fascia and spaces) to lay and professional audiences in ways that each group can understand;
- Explain the relationships amongst structure, function and dysfunction pertinent to regions of the abdomen and pelvis;
- Relate the relevant anatomical structures within the abdomen and pelvis to osteopathic practice.

Class Contact: Four (4) hours per week or equivalent for one semester comprising lectures, tutorials and laboratory practicals. Practical sessions have a hurdle requirement of at least 90% attendance.


Assessment: Participation in practical sessions with at least 90% attendance unless well-documented acceptable reasons are provided (hurdle requirement). Examination Combined practical and oral 10%

HHA1273 ANATOMY 3

Locations: City Flinders,

Pre-requisites: HHA1272 - ANATOMY 2 OR EQUIVALENT.

Descriptions: Visceral anatomy of the head, neck, thorax, abdomen and pelvis, including the histology of visceral tissues. Embryological development of the major systems, including the neuromusculoskeletal system.

Credit Points: 8

Learning Outcomes: On successful completion of this unit, students are expected to:

- Relate the relevant anatomical structures within the head, neck, thorax, abdomen and pelvis to osteopathic practice;
- Communicate knowledge of anatomy to colleagues and to lay people in ways that each group can understand, and using prosecuted material or anatomical models as appropriate;
- Explain the clinical significance of various disease conditions typically presenting to an osteopathic clinic.

Class Contact: Four (4) hours per week or equivalent for one semester comprising lectures, tutorials and laboratory practicals. Practical sessions have a hurdle requirement of at least 90% attendance.


Assessment: Participation in practical sessions with at least 90% attendance unless well-documented acceptable reasons are provided (hurdle requirement); two practical viva voce examinations (one at 10%; the other at 45%); one 2-hour final written examination (45%). Examination one at 10%; the other at 45% 55%

HHA3275 ANATOMY 5

Locations: City Flinders,

Pre-requisites: HHA2274 - ANATOMY 4 OR EQUIVALENT.

Descriptions: General and radiographic anatomy, histology and embryology of the human body. Various visceral and musculo-skeletal diseases and conditions and associated clinical significances. Progressive prospection and specimen review of human material in a supervised wet lab environment.

Credit Points: 6

Learning Outcomes: On successful completion of this unit, students are expected to be able to:

- Identify, name and describe human anatomical structures from a regional perspective;
- Describe the developmental processes and histology of all the major systems;
- Prosect cleanly and accurately a nominated musculo-skeletal region of the human body;
- Communicate knowledge of anatomy to colleagues and to lay people in ways that each group can understand, and using prospected material or anatomical models as appropriate;
- Explain the relationships amongst structure, function and dysfunction;
- Relate the relevant anatomical structures to osteopathic and medical practice;
- Explain the clinical significance of various disease conditions typically presenting to an osteopathic clinic.

Class Contact: Seven (7) hours per week or 84 per semester; comprising lectures, tutorials and laboratory practicals.
Practical sessions have a hurdle requirement of at least 90% attendance.


**OR**


**Pre-requisites:** HHA2173 - ANATOMY 3 OR EQUIVALENTS.

**Locations:**
HHC2272  BIOMECHANICS 2

**Descriptions:**
Three (3) hours per week or equivalent for one semester comprising lectures, tutorials and laboratory practicals. Practical sessions have a hurdle requirement of at least 90% attendance.

**Assessment:**
Participation in practical sessions with at least 90% attendance unless well-documented acceptable reasons are provided (hurdle requirement).

Formative assessment: A written project proposal must be submitted prior to commencing specimen preparation. This is a hurdle requirement. Presentation Oral 30%

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**HHC2171 BIOMECHANICS 1**

**Locations:** City Flinders, St Albans,

**Pre-requisites:** HHA1272 - ANATOMY 2 OR EQUIVALENTS.

**Descriptions:**

**Credit Points:** 6

**Learning Outcomes:** On successful completion of this unit, students are expected to be able to:

- Define and use correctly basic biomechanical terminology and principles;
- Discuss basic biomechanical principles in relation to osteopathic practice;
- Describe using general concepts, the structure and function of the components of joints;
- Explain the functions of the various joints and tissues in the human body;
- Comment on laboratory analysis techniques in kinetics, kinematics and gait.

**Class Contact:** Three (3) hours per week or equivalent for one semester comprising lectures, tutorials and laboratory practicals. Practical sessions have a hurdle requirement of at least 90% attendance.


**Assessment:**
Participation in practical sessions with at least 90% attendance unless well-documented acceptable reasons are provided (hurdle requirement); one 10 minute video presentation (30%); one 2-hour final written exam (70%).

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**HHC3173 BIOMECHANICS 3**

**Locations:** City Flinders,

**Pre-requisites:** HHC2272 - BIOMECHANICS 2 OR EQUIVALENT.

**Descriptions:**
Application of biomechanics to daily living and common activities. Gait, posture, ergonomics, lifting. Walking and running injuries; shoulder - throwing and injuries; sport biomechanics.

**Credit Points:** 6

**Learning Outcomes:** On successful completion of this unit, students are expected to be able to:

- Apply biomechanical principles and knowledge of anatomy to common activities;
- Apply biomechanical principles to the analysis of daily and other specified activities;
- Apply appropriate laboratory-based methods to analyse those activities;
- Orally present individual biomechanics research findings in a seminar setting.

**Class Contact:** Three (3) hours per week or equivalent for one semester comprising lectures, tutorials and laboratory classes. Practical sessions have a hurdle requirement of at least 90% attendance.


**Assessment:**
Participation in practical sessions with at least 90% attendance unless well-documented acceptable reasons are provided (hurdle requirement). Other Oral Tutorial questions (week 5) 10%

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**HHC2272 BIOMECHANICS 2**

**Locations:** City Flinders,

**Pre-requisites:** HHA2173 - ANATOMY 3 OR EQUIVALENTS.

**Descriptions:**
Biomechanical analysis of specific joints in the human thorax and spine, hip, shoulder, knee and ankle. Analysis of joint components, muscles and passive structures peculiar to each joint, and an overview of injury-related issues peculiar to each joint. Students will research one specific topic area.

**Credit Points:** 6

**Learning Outcomes:** On successful completion of this unit, students are expected to be able to:

- Discuss in detail the biomechanics of major joints;
- Describe joint injury mechanics peculiar to each joint;
- Predict common causes of injury to each joint;
- Demonstrate laboratory analysis techniques in a biomechanics laboratory;
- Critically assess published research papers on mechanics of the body and its joints.

**Class Contact:** Three (3) hours per week or equivalent for one semester comprising lectures, tutorials and laboratory practicals.


**Assessment:**
Presentation 10-minute video 30% Class quizzes (hurdle requirement); one 10 minute video presentation (30%); one 2-hour final written exam (70%).

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**HHC3274 BIOMECHANICS 4**

**Locations:** City Flinders, St Albans,

**Pre-requisites:** HHC3173 - BIOMECHANICS 3 OR EQUIVALENT.

**Descriptions:**
Further expansion of the analysis of specific musculoskeletal and postural problems. How posture changes when injury/illness occurs and the effect this has on the rest of the body.

**Credit Points:** 6
Learning Outcomes: On successful completion of this unit, students are expected to be able to:

- apply knowledge of biomechanical principles including knowledge of anatomy to common activities;
- describe postural changes that may occur as a result of specified injuries or illnesses;
- evaluate the effects of posture and changes to posture on the human body; and
- discuss topical questions in a seminar setting periodically throughout the semester.

Class Contact: Three (3) hours per week or equivalent for one semester comprising laboratory classes. Practical sessions have a hurdle requirement of at least 90% attendance.


Assessment: Participation in practical sessions with at least 90% attendance unless well-documented acceptable reasons are provided (hurdle requirement); oral tutorial questions (week 5) (10%); oral tutorial questions (week 10) (10%), 15 minute oral exam as part of 3rd year OSCE (80%).

Written and practical examinations have been replaced by an Objective Structured Clinical Examination (OSCE) in line with other units in the 3rd year Bachelor of Osteopathic Science program. This type of examination assesses a student’s clinical and practical skills, reflects more closely the reality of osteopathic practice and improves integration with other clinical and practical units.

Other Oral Tutorial Questions (Week 5) 10%

HHD101 INTRODUCTION TO DERMAL THERAPY STUDIES

Locations: City King St, On-line,

Pre-requisites: Nil.

Descriptions: This unit introduces students to higher education through the examination of studies in Dermal Therapies. Students will investigate the role of dermal therapies within a health framework and will examine, at an introductory level, clinical practices and procedures and research trends in dermal therapy. The unit introduces and develops in students academic and other tertiary study skills necessary for successful study in higher education. Skills include academic essay writing, lecture note-taking, the pitfalls of plagiarism and collusion, APA referencing style and format, and examinations strategies. Scientific writing and basic principles of research are introduced through critical appraisal of published journal articles that focus predominantly on the dermal therapies. Application of academic studies skills, with particular emphasis on critical evaluation, is emphasised throughout the unit. Successful completion of this unit requires that students attend and successfully complete the intensive study block (on campus) associated with this unit.

Credit Points: 12

Learning Outcomes: On successful completion of this unit, students are expected to be able to:

- Describe the basic floor plan of a human cell, including the organelles and cellular membrane;
- Explain cellular functions in terms of cellular structures;
- Describe the structures (anatomy and basic histology) of the circulatory, lymphatic, musculoskeletal, nervous, endocrine and integumentary systems with special reference to dermal therapy;
- Explain the functions (physiology) of the circulatory, lymphatic, musculoskeletal, nervous, endocrine and integumentary systems with special reference to dermal therapy;
- Discuss how hormones affect the integumentary system in normal and pathological conditions;
- Outline key microbiological concepts and principles relevant to dermal therapy;
- Comment on infection control and sterile procedures in dermal therapy.

Class Contact: Total of thirty-six (36) hours for one semester comprising online lectures, online tutorials and a lab session.


Assessment: Examination 1.5-hour written examination 35%
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infection, inflammation, wound repair, neoplasia, and tissue responses to stress relevant to the practice of Dermal Therapy. The unit provides underpinning knowledge that students will require in their theoretical and practical applications throughout the associate degree program. Specific topics include: wound rehabilitation, skin and deeper tissue physiology, inflammatory response and associated damage, allergic responses, embryology of the skin, and structure and biochemistry of the skin. This unit extends the knowledge of anatomy and physiology gained in the Diploma of Beauty Therapy.

Credit Points: 12

Learning Outcomes: On successful completion of this unit, students are expected to be able to:

- Explain the function of the skin in terms of its structure;
- Discuss, with specific details, the biochemistry of the skin;
- Explain the principles of the inflammatory process and the process of wound healing;
- Describe the embryology of the integumentary system;
- Outline the clinical manifestations pathophysiology aetiology and embryology for common neoplasias;
- Compare and contrast benign and malignant neoplasias.

Class Contact: Thirty-six (36) hours for one semester comprising online lectures, online tutorials and a laboratory session.


Assessment:
- Examination 1.5-hour online examination 35%
- Required reading:

HHD1271 CLINICAL DIAGNOSIS & MANAGEMENT 1

Locations: City Flinders, St Albans,

Pre-requisites: HHO1171 - OSTEOPATHIC SCIENCE 1 OR EQUIVALENTS.

Descriptions: Content will include an introduction to the examination and assessment of: the skin, head and neck, eye and ear, respiratory system, heart, peripheral vascular system, cranial nerves, abdomen and peripheral nervous system. Students will be trained in the use of equipment commonly employed in clinical examinations, including the stethoscope, otoscope, ophthalmoscope, reflex hammer, tuning fork, and sphygmomanometer.

Credit Points: 6

Learning Outcomes: On successful completion of this unit, it is expected that students will be able to:

- Correctly and accurately use the vocabulary of the clinical examination;
- Name the basic skin lesions and explain at a basic level their aetiology;
- Conduct a competent examination of the following structures: head, eyes, ears, nose, mouth, neck, nervous system, including the cranial nerves and reflexes, muscles and joints, thorax including lungs, heart and great vessels, peripheral vascular system, and abdomen;
- Describe the basic abnormal signs and symptoms that may be encountered when the named structures and systems are affected by pathology;
- Integrate and apply knowledge of anatomy and physiology (including from other units) to the living body;
- Explain the purpose and demonstrate at least limited use of the basic tools of clinical medicine, such as the stethoscope, otoscope, ophthalmoscope, reflex hammer, tuning fork and sphygmomanometer.

Class Contact: Two (2) hours per week or equivalent for one semester comprising lectures and practical classes. Practical sessions have a hurdle requirement of at least 90% attendance.

Required Reading:

Assessment: Participation in practical sessions with at least 90% attendance unless well-documented acceptable reasons are provided (hurdle requirement); mock viva voce practical examination (pass/fail formative assessment) (hurdle requirement); final viva voce practical examination (100%) (hurdle requirement).
HHD2101 DERMAL HEALTH SCIENCE 3

Locations: City King St, On-line,

Pre-requisites: HHD1201 - DERMAL HEALTH SCIENCE 1 or STUDENTS WILL REQUIRE ACCESS TO OR BE EMPLOYED BY AN APPROPRIATE SALON OR DERMAL CLINIC IN ORDER TO COMPLETE ASSESSMENT TASKS ASSOCIATED WITH THIS UNIT.

Descriptions: This unit builds on the knowledge presented in Health Science 1 by further researching advanced skin structure and cosmetic dermatology, specifically in the area of dermatological conditions. This unit also covers the clinical features, pathophysiology including histological features, aetiology, diagnosis, treatment and management, and epidemiology of a range of non-infectious dermatological conditions. Conditions include dermatitis, eczema, psoriasis, benign and pre-malignant skin lesions and skin cancers. Other skin disorders requiring the introduction and development of pharmacology and toxicology are also discussed. Principles of pharmacology and toxicology are reinforced with research studies on the effects of various drugs and chemicals on the skin. Students are expected to investigate the effects on the skin of various cosmetic ingredients especially those in chemical peels and cosmeceutical preparations. Client responses warranting referral to a medical practitioner are covered and students will be expected to become familiar with the Therapeutic Goods Act and other legislation relevant to practical work in dermal therapy.

Credit Points: 12

Learning Outcomes: On successful completion of this unit, it is expected that students will be able to:

- Describe common and serious clinical scenarios in the haematological, cardiovascular, renal and urogenital systems;
- Demonstrate appropriate examination skills relevant to the cardiovascular, renal and urogenital systems;
- Recognise symptoms or signs that warrant referral to another practitioner including those that require immediate referral;
- Describe and use the communication skills involved in the consultative process;
- Discuss models of clinical judgment used by a practising General Practitioner in relation to their own clinical experience;
- Explain the appropriate applications of and typical pathological findings from widely employed laboratory, radiological and other special investigations of the haematological, cardiovascular, renal and urogenital systems.

Class Contact: Four (4) hours per week or equivalent for one semester comprising lectures and tutorials.


Assessment: One 15-minute practical examination (35%); one 2-hour written examination (65%).

HHD2204 DERMAL ANATOMY AND PHYSIOLOGY

Locations: City King St, City Queen, City Flinders,

Pre-requisites: SUCCESSFUL COMPLETION OF ALL TAFE UNITS IN THE DIPLOMA OF BEAUTY THERAPY, OR EQUIVALENT.

Descriptions: The unit introduces students to theoretical aspects of anatomy, physiology, and microbiology relevant to the practice of dermal therapy. The unit provides important underpinning knowledge that students will require in their practical applications throughout the degree program. Topics include cell and cell membrane structure and function, the musculoskeletal system including joints, the circulatory and lymphatic systems, the nervous system with emphasis on the central nervous system, and the endocrine system. This unit also includes the identification and biochemistry of micro-organisms, a basis for the dermatology and pathology material in later units, and a grounding in microbiology sufficient for infection control and sterile procedures required in the clinical practice units.

Credit Points: 12

Learning Outcomes: On successful completion of this unit, students are expected to be able to:

- Describe the structure and function of the circulatory system;
- Describe the craniofacial vasculature and the microvasculature of the skin;
- Describe the structure of the lymphatic system as it relates to the practice of dermal therapies treatments such as clinical manual lymphatic drainage and machine based lymphatic drainage;
- Describe the structure and function of the skeletal system, with an emphasis on craniofacial osteology, arthrology and bony landmarks;
- Describe the structure and function of the muscular system in relation to the practice of dermal therapies;
- Describe the structure and function of cells and cellular membranes;
- Describe the structure and function of the nervous system;
- Apply the principles of microbiology to the application of dermal therapies procedures;
- Describe the endocrine system and the function of hormones in relation to the performance of dermal therapy procedures;
HHD2205 DERMAL LASER PRACTICE AND TECHNIQUES 1

Locations: City King St, On-line,

Pre-requisites: HHD2101 - DERMAL HEALTH SCIENCE 3
STUDENTS WILL REQUIRE ACCESS TO OR BE EMPLOYED BY AN APPROPRIATE SALON OR DERMAL CLINIC IN ORDER TO COMPLETE ASSESSMENT TASKS ASSOCIATED WITH THIS UNIT.

Descriptions: This unit covers aspects of laser light physics and laser safety. Topics include laser optics, laser properties, laser tissue interactions, light-based dermal treatments, introduction to mechanisms underlying certain laser and light-based therapies; and safety issues involved with the use of cosmetic laser devices in a health care setting. Principles of laser safety are according to Australian Standards and related government regulations. Successful completion of this unit requires that students attend and successfully complete the intensive practical study block (on campus) associated with the unit.

Credit Points: 12

Learning Outcomes: On successful completion of this unit, it is expected that students will be able to:

- Discuss how the Australian and New Zealand standards for the safe use of lasers in a health care setting apply to the use and management of these modalities in dermal therapies;
- Describe and discuss the properties of laser light;
- Discuss and discuss a range of laser tissue interactions;
- Explain the mechanisms underlying the effectiveness of certain laser and light-based therapies;
- Describe and discuss issues of laser safety relevant to the use of laser devices for aesthetic purposes;
- Explain in plain English (as if to a client), general safety issues that apply to health care settings in which lasers are used;
- Discuss legislative issues in relation to the use of non-ionising radiation sources for aesthetic purposes.

Class Contact: 3 hours per week


Assessment: This unit has three (3) assessment items: A two (2) hour MCQ examination 35% (P3, I3, W3, A3, D3); Three (3) online discussion exercises (composed of a series of short answer questions relating to selected journal articles) 30% (P3, I3, W3, A3, D3); Practical assessments (Students are to perform selected procedures taught within the unit to professional dermal therapist standards), 35% (P3, I3, O3, A3, C3, D3)

HHD2206 DERMAL LASER PRACTICE AND TECHNIQUES 2

Locations: City King St, On-line,

Pre-requisites: HHD2101 - DERMAL HEALTH SCIENCE 3
STUDENTS WILL REQUIRE ACCESS TO OR BE EMPLOYED BY AN APPROPRIATE SALON OR DERMAL CLINIC IN ORDER TO COMPLETE ASSESSMENT TASKS ASSOCIATED WITH THIS UNIT.

Descriptions: This unit covers aspects of theory and application of laser and light based procedures. The unit includes topics such as laser tissue interactions in relation to Class 3b lasers, radio frequency devices, class 4 lasers for tattoo removal and resurfacing, and photodynamic therapy. Knowledge and skills in a range of laser and light-based therapy devices are developed further, and students will apply laser safety protocols associated with the use of cosmetic laser devices in a health care setting. Professional skills, attitude and presentation appropriate for a clinician dealing with laser and light-based therapy devices are further refined. Successful completion of this unit requires that students attend and successfully complete the intensive practical study block (on campus) associated with the unit.

Credit Points: 12


Assessment: This unit has three (3) assessment items: A two (2) hour MCQ examination 35% (P3, I3, W3, A3, D3); Three (3) online discussion exercises (composed of a series of short answer questions relating to selected journal articles) 30% (P3, I3, W3, A3, D3); Practical assessments (Students are to perform selected procedures taught within the unit to professional dermal therapist standards), 35% (P3, I3, O3, A3, C3, D3)

HHD2207 DERMAL LASER PRACTICE AND TECHNIQUES 3

Locations: City King St,

Pre-requisites: HHD2101 - DERMAL HEALTH SCIENCE 3
STUDENTS WILL REQUIRE ACCESS TO OR BE EMPLOYED BY AN APPROPRIATE SALON OR DERMAL CLINIC IN ORDER TO COMPLETE ASSESSMENT TASKS ASSOCIATED WITH THIS UNIT.

Descriptions: This unit covers aspects of theory and application of laser and light based procedures. The unit includes topics such as laser physics, laser tissue interactions in relation to class 3b and class 4 lasers and pulsed light technologies. Knowledge and skills in a range of advanced lasers and light-based dermal treatments are developed further, and students will apply laser safety protocols associated with the use of cosmetic laser devices in a health care setting. Professional skills, attitude and presentation appropriate for a clinician dealing with laser and light-based therapy devices are expected. Successful completion of this unit requires that students attend and successfully complete the intensive practical study block (on campus) associated with the unit.

Credit Points: 12
Learning Outcomes: On successful completion of this unit, it is expected that students will be able to:

- Explain how knowledge of laser and light physics is used in the application and management of Class 3b and Class 4 lasers and pulsed light treatments;
- Discuss laser tissue interactions in relation to Class 3b and 4 lasers and pulsed light technologies;
- Explain the mechanisms underpinning certain Class 4 laser and pulsed light therapies;
- Compare and contrast a range of aesthetic laser and light modalities for treating various skin conditions;
- Document the assessment of client needs and suitability for a range of light based treatments;
- Perform a range of advanced laser and light based treatments, safely, effectively and efficiently, according to client needs and procedure protocols;
- Communicate appropriately (in plain English) with clients with special needs and fellow clinicians (in plain and technical language) about straightforward and complex conditions, advantages and disadvantages of the treatment options, and the recommended treatment plan(s);
- Demonstrate professional skills, attitude and presentation (including appropriate communication skills, and social and cultural awareness and responsiveness with clients and colleagues) consistent with dermal clinicians dealing with laser and light-based therapy devices.

Class Contact: 3 hours per week


Assessment: This unit has three (3) assessment items: This unit has three (3) assessment items: A two (2) hour MCQ examination 35% (P3, I3, W3, A3, D3); One (1) Written assignment on laser documentation (pre procedure instructions, consent form, and post procedure directions). 30% (P3, I3, W3, A3, D3); Practical assessments (Students are to perform selected procedures taught within the unit to professional dermal therapist standards), 35% (P3, I3, O3, A3, C3, D3)

HHD2208 MEDICAL PROCEDURES RELATED TO DERMAL THERAPY

Locations: City King St, On-line,

Pre-requisites: HHD2101 - DERMAL HEALTH SCIENCE 3STUDENTS WILL REQUIRE ACCESS TO OR BE EMPLOYED BY AN APPROPRIATE SALON OR DERMAL CLINIC IN ORDER TO COMPLETE ASSESSMENT TASKS ASSOCIATED WITH THIS UNIT.

Descriptions: In this unit, students are introduced to theoretical aspects of specific medical procedures that relate to dermal therapy. Medical and aesthetic reasons for a range of approaches will be outlined using terminology typically used in medical and healthcare settings. Basic clinic management procedures will include appropriate record keeping and case note recording. Students will observe, via various media, a representative range of face and body procedures including plastic, reconstructive and cosmetic. Pre- and post-operative management and adjunctive therapies used by dermal clinicians are included. Other topics are: aging skin; management of aged skin and other fragile skin conditions; management and documentation of complications and adverse outcomes; and the role of the dermal therapist and medical procedures.

Credit Points: 12

Learning Outcomes: On successful completion of this unit, it is expected that students will be able to:

- Describe and discuss at a basic level, the principles and techniques typically used in routine cosmetic, plastic and reconstructive procedures;
- Discuss appropriate pre- and post-operative management and adjunctive therapies used by dermal clinicians for patients who have undergone cosmetic, plastic and reconstructive procedures;
- Describe and document complications and adverse outcomes typically seen in dermal therapy;
- Describe and document procedures and management plans for complications and adverse outcomes typically seen in dermal therapy;
- Explain the process of aging skin;
- Discuss the management and issues related to the management of aging skin and other fragile skin conditions;
- Evaluate the role of the dermal therapist in relation to cosmetic, plastic and reconstructive medical procedures.

Class Contact: Independent research together with regular online and telephone contact with the project coordinator and other students of the Clinical Practice unit of study as advised by the project coordinator.


Assessment: This unit has three (3) assessment items: This unit has three (3) assessment items: One (1) Case Study (2000 words) 40% (P2, I2, W2, A2, D2)

HHD2214 HEALTH RESEARCH STUDY PERSPECTIVES

Locations: City King St, City Queen, City Flinders,

Pre-requisites: SATISFACTORY COMPLETION OF ALL THE DIPLOMA TAFE UNITS (OR EQUIVALENT)

Descriptions: This subject provides an introductory research focus for health care professionals with an emphasis on basic quantitative paradigms. A primary aim of this introductory research subject will be to facilitate the students’ ability to critically analyse and evaluate selected research literature relating to health sciences with particular reference to the safe practice of applied dermal therapies. Preparatory academic skills required for the rest of the course will also be covered; these include APA referencing, writing academic essays, and sourcing appropriate information.

Credit Points: 12

Learning Outcomes: On successful completion of this unit the student will be able to: understand how to read research papers (assessed via article critique / essay), and how to determine quality of design, by having a greater understanding of the statistics (assessed via exam) contained within, and by being able to make a clear distinction between strong and weak research findings (assessed via article critique / essay). The students will be able to make the distinction between TAFE and higher level University standards with regard to level of assessment and academic writing (assessed via essay). They will be able to reference in APA format and be able to write an essay at University standard (assessed via essay).

Class Contact: 3 hours per week or equivalent


Assessment: This unit has three (3) assessment items:One (1) two and a half (2.5) hour written examination 30% (One (1) Article Critique (students are to critique a selected article 1000 words) 20% One (1) assignment 2000 words, 50%
HHD2224 INDUSTRIAL PRACTICUM 1

Locations: City King St, City Queen, City Flinders,

Pre-requisites: SATISFACTORY COMPLETION OF THE DIPLOMA TAFE UNITS, OR EQUIVALENT.

Descriptions: In this subject students will explore the workplace context by examining the organisational structure and identifying and defining their role as an active and accountable employees within industry. They will gain a better understanding as to what techniques are best suited for particular conditions. They will also apply experiential learning. Students will also be able to reflect on the integration of academic and workplace learning.

Credit Points: 24

Learning Outcomes: Upon successful completion of this unit, it is expected that students will become more confident in the application of their skills obtained at the diploma level (assessed via situation analysis report). Students will be exposed to a wide range of clients and procedures so that they feel more confident in dealing with future clients (assessed via student portfolio).

Class Contact: 12 hours per week within an approved clinical setting.

Required Reading: Unit manual to be developed

Assessment: Hurdle requirement - students are required to undertake workplace-based activities to the equivalent of 450 hours. This unit has two (2) assessment modalities: Student portfolio - (the student is to develop a portfolio of reports, case studies and reflective journal entries documenting the range of procedures they have been performing 3000 words. Students are also required to assess their skill development against the core graduate attributes and identify areas for further development) 70% (P2, I2, W2, A2, C2, D2), Situation analysis report - students are required to report on the workplace context in which these learning is occurring, and examine its place within industry sector (1000 words) 30% (P2, I2, W2, A2, D2)

HHD2227 CLINICAL DIAGNOSIS & MANAGEMENT 3

Locations: City Flinders, St Albars,

Pre-requisites: HHD2172 - CLINICAL DIAGNOSIS & MANAGEMENT 20R EQUIVALENT.

Descriptions: Clinical presentations of common and life-threatening diseases affecting the respiratory, gastrointestinal and endocrine systems will be discussed. The unit features common clinical scenarios with clinical examination of those scenarios, and the common laboratory and radiological tests used in the investigations of those systems. Particular emphasis will be given to conditions that are of special interest to osteopaths.

Credit Points: 6

Learning Outcomes: On successful completion of this unit, it is expected that students will be able to:

- Describe common and serious clinical scenarios in the respiratory, gastrointestinal and endocrine systems;
- Demonstrate appropriate examination skills relevant to the respiratory, gastrointestinal and endocrine systems;
- Recognise symptoms or signs that warrant referral to another practitioner including those that require immediate referral;
- Describe and use the communication skills involved in the consultative process;
- Discuss models of clinical judgment used by a practicing General Practitioner in relation to their own clinical experience;
- Explain the appropriate applications of and typical pathological findings from widely employed laboratory, radiological and other special investigations of the respiratory, gastrointestinal and endocrine systems.

Class Contact: Four (4) hours per week or equivalent for one semester comprising lectures and tutorials.


Assessment: One practical examination (35%); one 2-hour written examination (65%).

HHD2304 COOPERATIVE PLACEMENT

Locations: City King St, City Queen, City Flinders,

Pre-requisites: Industry Placement 1, or equivalent.

Descriptions: Students will acquire a greater understanding of their future career and study plans and will significantly enhance the prospects of achieving successful graduate employment outcomes (assessed via situation analysis report). The student will be able to begin to critically evaluate their own technical and generic skills and compare them with what extra knowledge and skill is required as a dermal therapist (assessed via student portfolio). Students will be able to identify the benefits of developing networks and professional contacts within the industry (assessed via student portfolio).

Credit Points: 48

Learning Outcomes: Students will acquire a greater understanding of the limitations of physical therapy procedures and differences with dermal therapy procedures. Students will begin to incorporate the knowledge they have learnt in the previous semester into their work practices.

Class Contact: 12 hours per week within an approved clinical setting.

Required Reading: School Manual to be developed

Assessment: Hurdle requirement - students are required to undertake workplace-based activities to the equivalent of 450 hours. This unit has two (2) assessment modalities: Student portfolio - (the student is to develop a portfolio of reports, case studies and reflective journal entries documenting the range of procedures they have been performing 3000 words. Students are also required to assess their skill development against the core graduate attributes and identify areas for further development) 70% (P2, I2, W2, A2, C2, D2), Situation analysis report - students are required to report on the workplace context in which these learning is occurring, and examine its place within industry sector (1000 words) 30% (P2, I2, W2, A2, D2).

HHD3114 WORKPLACE ISSUES IN DERMAL PRACTICE

Locations: City King St, City Queen, City Flinders,

Pre-requisites: Nil

Descriptions: This unit will look at various aspects of how our mental state and that of others can affect our workplace environment. Through a better understanding of themselves, students will be able to gather a better understanding of others. Students will not only examine different psychological techniques but also what to do when various issues arise. Students will consider various psychological conditions that effect workplace functioning such as stress and horizontal violence. They will also consider psychological conditions that clients may present with such as body dysmorphic disorders, terminal illness, personality disorders and how to deal with them.

Credit Points: 12

Learning Outcomes: Students will be able to work more cohesively in their respective workplace with a greater understanding of themselves and others. Students will be better able to cope with issues arising with clients, due to a greater understanding of a clients cognitive processes, along with how to refer that client to others, or arranging emergency help.

Class Contact: 3 hours per week or equivalent

Assessment: 45% Reflective journals (2500 words) - Students are to present a reflective journal encompassing their opinions and related arguments or agreements to each lecture. 55% Protocol workbook (2500 words) - students are to select five issues covered in the lectures and prepare a standard protocol on how to address these issues in the workplace setting).

HHD3124 INDUSTRY PRACTICUM 2

Locations: City King St, City Queen, City Flinders,

Pre-requisites: SATISFACTORY COMPLETION OF ALL THE DIPLOMA TAFE UNITS (OR EQUIVALENT), INDUSTRIAL PRACTICE 1, CO-OPTATIVE PLACEMENT.

Descriptions: In this subject students will explore the workplace context by examining the organisational structure and identifying and defining their role as active and accountable employees within industry. Students will develop an understanding of the key issues relating to the transition to the professional workplace, including workplace culture, professional etiquette and communications. They will gain a better understanding as to what techniques they can apply and experiential learning in how to apply them. Students will also be able to reflect on the integration of the academic and workplace learning.

Credit Points: 24

Learning Outcomes: Students will feel greater confidence in the application of their skills obtained after completion of Industrial Practice 1 (assessed via via situation analysis report). Students will be further exposed to a wide range of clients and procedures so that they feel more confident in dealing with future clients (assessed via student portfolio).

Class Contact: 12 hours per week within an approved clinical setting

Required Reading: School developed manual

Assessment: Hurdle requirement - students are required to undertake workplace-based activities to the equivalent of 450 hours. This unit has two (2) assessment modalities: Student portfolio - (the student is to develop a portfolio of reports, case studies and reflective journal entries documenting the range of procedures they have been performing 3000 words. Students are also required to assess their skill development against the core graduate attributes and identify areas for further development) 70% (P2, 12, 02, W2, A2, C2, D2) Situation analysis report - students are required to report on the workplace context in which these learning is occurring, and examine its place within industry sector (1000 words) 30% (P2, 12, W2, A2, C2, D2)

HHD3134 DERMAL SCIENCE

Locations: City King St, City Queen, City Flinders,

Pre-requisites: HHD2204 - DERMAL ANATOMY AND PHYSIOLOGY

Descriptions: The subject will introduce students to theoretical aspects of integumentary system embryology, structure and function, patho-physiology, immunology, cellular damage, allergy, inflammation, wound repair, neoplasia and tissue responses to stress relevant to the practice of Dermal Therapy. The subject will provide important underpinning knowledge that students will require in their practical applications throughout the degree program. Knowledge to be developed will include: wound repair, integumentary system biology, embryology and biochemistry, inflammatory response and associated damage, infection, immunity and allergy and neoplasia.

Credit Points: 12

Learning Outcomes: On successful completion of this unit the student will be able to:

• Discuss the embryological development of the skin and its appendages
• The student will gain a deeper knowledge of the skin (from previous units) that will allow them to better understand the application and effects of dermal treatments.
• Knowledge of the principles of wound healing will enable the student to treat conditions with more confidence and better outcomes. The student will feel more able to identify and understand a variety of pathological and physiological events, which a person under their care may be experiencing.

Class Contact: 4 hours per week or equivalent


Assessment: 30% Reading exercises (Composed on a series of short answer questions relating to selected journal articles) 35% Assignment (Essay 2000 words) 35% Written Examination (2.5 hours duration)

HHD3174 CLINICAL DIAGNOSIS & MANAGEMENT 4

Locations: City Flinders,

Pre-requisites: HHD2273 - CLINICAL DIAGNOSIS & MANAGEMENT 3 OR EQUIVALENT.

Descriptions: The clinical examination of the musculoskeletal system of the human body in detail. Students will be specifically trained in the advanced examination of the joints and the associate muscles at the shoulder, elbow, wrist, hand, hip, knee, ankle and foot. Key diagnostic procedures, tests and investigations used to diagnose pathology of the joints, bones and connective tissues will be discussed. Students will be trained in the use of a detailed diagnostic algorithm for the diagnosis of musculoskeletal conditions. These skills will be contextualised in terms of the main diseases affecting the musculoskeletal system. Skills required for advanced usage of typical equipment employed in the musculoskeletal examination will be refined.

Credit Points: 6

Learning Outcomes: On successful completion of this unit, it is expected that students will be able to:

• Use at proficiency level the vocabulary of the musculoskeletal examination;
• Discuss the fundamentals of history as they pertain to musculoskeletal disease;
• Explain key diagnostic procedures, tests and investigations employed in rheumatology;
• Conduct a competent examination of the following joints and their associated musculature and accessory structures such as bursae, menisci and ligaments: shoulder, elbow, wrist, hand, hip, knee, ankle and foot;
• Use a diagnostic algorithm to arrive at a differential diagnosis;
• Recognise the main classes of bone tumours and their specific clinical manifestations;
• Integrate knowledge previously presented in anatomy and physiology and apply this integrated knowledge to the living body;
• Demonstrate competent usage of the basic tools associated with clinical examinations of the shoulder, elbow, wrist, hand, hip, knee, ankle and foot.

Class Contact: Three (3) hours per week or equivalent for one semester comprising lectures and practical tutorials. Practical sessions have a hurdle requirement of at least 90% attendance.


Assessment: One practical examination (40%); one 2-hour written examination (60%).

HHD3204 LASER SAFETY AND LIGHT BASED TREATMENTS

Locations: City King St, City Queen, City Flinders,

Pre-requisites: HHD3134 - DERMAL SCIENCE

Descriptions: This subject covers Australian standards in laser safety and where applicable relevant government laws relating to the use of cosmetic lasers. Students will also be given an introduction on how lasers work, leading to practical
applications of treating various skin conditions using low level lasers. Other newer light based treatments such as phototherapy and infra-red based therapy will also be discussed with regard to safety, efficacy and dermal applications.

Credit Points: 12

Learning Outcomes: The student will feel more confident in the understanding of how certain low level laser based treatments work and where it is appropriate, how to perform them. Knowledge of Australian standards in laser safety will enable the student to perform laser treatments and manage laser operational settings with a greater degree of safety and confidence. The student will gain experience in the use and build their knowledge of class 3 lasers and photodynamic therapy.

Class Contact: 3 hours per week or equivalent


Assessment: 30% Practical Assessments (Students are to perform selected procedures taught within the unit to professional dermal therapist standards) 40% Written Examination (2.5 hours duration) 30% Reading exercises (Composed on a series of short answer questions relating to selected journal articles)

HHD3214 ELECTRICALLY BASED DERMAL TREATMENTS

Locations: City King St; City Queen; City Flinders

Pre-requisites: HHD2204 - DERMAL ANATOMY AND PHYSIOLOGY OR EQUIVALENTS.

Descriptions: This unit will enable on-going evaluation of treatments in progress and final evaluation of completed treatments. Practical application of advanced dermal treatment techniques will be undertaken. Specific techniques used to support the clinical procedures will be used this includes a variety of electrotherapies. This unit will also build upon the underpinning knowledge of the nervous system, fluid electrolyte and acid base balance and electrical theory required to safely and effectively perform electrotherapy procedures.

Credit Points: 12

Learning Outcomes: On successful completion of this unit, students are expected to be able to:

• Explain the processes associated with certain electrically-based dermal techniques;

• Perform electrically-based techniques where appropriate;

• Explain electrical theory in relation to electrotherapy procedures in dermal therapy;

• Perform and manage various electrically-based dermal modalities with safety and confidence.

Class Contact: Total of thirty-six (36) hours for one semester comprising lectures, tutorials, and clinical placements.


Assessment: Assignment One written essay (2000 words) 30%

HHD3224 DERMATOLOGY

Locations: City King St; City Queen; City Flinders

Pre-requisites: HHD3134 - DERMAL SCIENCE OR EQUIVALENT.

Descriptions: This unit will build on the knowledge base covered in Dermal Anatomy and physiology, Dermal science by further researching cosmetic dermatology, specifically in the area of dermatological conditions that develop as a result of cosmetic substances put on the skin. This subject will also cover the management of non-infectious dermatological conditions such as dermatitis, eczema, psoriasis, benign and pre-malignant skin lesions and skin cancers. A range of vascular and connective tissue disorders will also be considered. This unit will also expand on the microbiology knowledge gained in Dermal anatomy and Physiology to include the indentionification, biochemistry and treatment of micro-organisms; specifically viruses and bacteria. Knowledge of skin disorders and diseases will lead into related pharmacology and will include studies of the effects of various drugs and chemicals, both topical and oral, on the skin. The unit will introduce the student to the basic concepts of chemistry. Particular emphasis will be placed on increasing student knowledge of enzymes, pH and buffer systems in preparation for the more in depth cosmetic chemistry covered in HHD3234- Peels Procedure.

Credit Points: 12

Learning Outcomes: On successful completion of this unit students are expected to be able to:

• Identify and discuss the structure of atoms, ions, molecules and compounds.

• Describe the basic chemistry of macronutrients

• Identify the types of chemicals bonds

• Explain the mechanisms of enzyme action and inhibition

• Discuss the concept of pH and buffer systems and how these relate to the practice of dermal therapies.

• Discuss the aetiology, epidemiology, clinical features, differential diagnosis and treatments for a range of dermatological diseases and disorders.

• Recognise a range of dermatological conditions.

• Discuss the role of a dermal clinician in the treatment of a range of dermatological conditions.

• Discuss when the dermal clinician can provide supportive care and when to refer to another health professional.

Class Contact: 4 hours per week or equivalent


Assessment: Presentation One seminar presentation 20%

HHD3234 PEELS PROCEDURE

Locations: City King St; City Queen; City Flinders

Pre-requisites: HHD2204 - DERMAL ANATOMY AND PHYSIOLOGY OR EQUIVALENT.

Descriptions: This unit expands on the dermal techniques covered in Electrically Based Dermal Treatments and sequencing as part of case management. This will occur through the on-going evaluation of treatments in progress and final evaluation of completed treatments. Practical application of advanced dermal treatment techniques will be undertaken. Specific techniques used to support the clinical procedures will be used this includes chemical peels and microdermabrasion. This unit will also cover the underpinning knowledge of chemistry, pharmacology and toxicology required to safely and effectively perform procedures using chemical preparations.

Credit Points: 12

Learning Outcomes: On successful completion of this unit, students are expected to be able to:

1. Explain the processes associated with peels procedures and microdermabrasion;

2. Correctly perform peels procedures and microdermabrasion where appropriate;

3. Evaluate and reflect on peels procedures and microdermabrasion performed in the clinic;

4. Explain the theory in relation to peels and microdermabrasion procedures in dermal therapy;
5. Perform and manage various chemically-based dermal modalities with safety and confidence.

Class Contact: Thirty-six (36) hours or equivalent for one semester comprising of lectures, tutorials, and clinical placements.

Required Reading: As no texts appropriate to the content of this unit are currently available, suitable reading material will be provided by the unit co-ordinator.

Assessment: Practicum Practical assessments within the teaching clinic mid and end-of-semester 10%

**HHD3270 PROFESSIONAL ETHICS**

Locations: City Flinders,

Pre-requisites: HHD3175 - OSTEOPATHIC SCIENCE 5 OR EQUIVALENT


Credit Points: 8

Learning Outcomes: On successful completion of this unit, it is expected that students will be able to:

- Discuss the legal framework in Australia in which osteopathy operates;
- Evaluate the place of osteopathy within the Australian and other healthcare systems;
- Debate the ethical requirements of practice in a multicultural society;
- Evaluate various Boards’ and Associations’ codes of conduct;
- Discuss the requirements for research and business ethics.

Class Contact: One (1) hour per week or equivalent for one semester comprising lecture workshops.


Assessment: Test One 20 minute quiz (20%); 20% Assessment will comprise of an one 20 minute quiz (20%) and an in class presentation of an ethical case and associated issues (80%).

**HHD4104 DERMAL CLINICAL PRACTICE 1**

Locations: City King St, City Queen, City Flinders,

Pre-requisites: Health Science 3; Dermal Clinical Practice 1, or equivalents.

Descriptions: Students will develop sterile techniques including dressings, and setting up for minor cosmetic or aesthetic procedures. Topics include wound management, infection, infection control, asepsis, sterilization, complications of wound healing, wound redressing, compression bandages and equipment, eye toilets, complications from bandaging and eye toilets.

Credit Points: 6

Learning Outcomes: The student will feel confident in the understanding of why infection control is important and is able to apply proper infection control methods related to medical procedures. The student will also have a greater understanding of what occurs during more common medical procedures.

**HHD4114 ADVANCED HEALTH RESEARCH PERSPECTIVES**

Locations: City King St, City Queen, City Flinders,

Pre-requisites: HHD2214 HEALTH RESEARCH STUDY PERSPECTIVES; OR EQUIVALENT.

Descriptions: This subject extends the knowledge gained in Health Research and Study Perspectives and introduces new concepts in qualitative research and case reports. Various forms of qualitative methods will be considered, as well as the steps involved in managing, analyzing and reporting a case study. Comparisons between the different types of research (quantitative, qualitative and case studies) will also be considered so that best practices can be identified.

Credit Points: 12

Learning Outcomes: Students will have a fuller understanding of research methodology by examining different forms of research design. Students will be able to make decisions on the best format to collect and analyse data for a particular experiment. Students will have greater knowledge of the positives and negatives of using quantitative methods versus qualitative methods versus case studies.

Class Contact: 3 hours per week or equivalent


Assessment: 60% Research design assignment (students are to collect background research and design an experiment 3000 words) 40% Article Critique (students are to critique two selected article 2000 words)

**HHD4124 LYMPHATIC PROCEDURES**

Locations: City King St, City Queen, City Flinders,

Pre-requisites: HHD3224 Dermatology; HHD3234 Peels Procedures.

Descriptions: This subject builds on dermal techniques covered in Electrically Based Dermal Treatments and sequencing as part of case management. This will occur through the on-going evaluation of treatments in progress and final evaluation of completed treatments. Practical application of advanced dermal treatment techniques will be undertaken. Specific techniques used to support the clinical procedures will be used; this includes manual lymphatic drainage and machine based lymphatic drainage treatments.

Credit Points: 6

Learning Outcomes: The student will feel confident in the understanding of how certain techniques work and where appropriate how to perform them. Knowledge of the principles of manual lymph drainage and machine based lymph drainage will enable the student to perform these procedures with greater safety and confidence. By performing a range of lymph drainage and machine based treatments the student will be more effective in dealing with clients and achieving desired outcomes.

Class Contact: 3 hours per week or equivalent


Assessment: 50% Practical Assessments (Students are to perform selected procedures taught within the unit to professional dermal therapist standards) 30% Written Examination (2.5 hours duration) 20% Reading exercises (Composed on a series of short answer questions relating to selected journal articles)
**HHD4134 LASER AND LIGHT PROCEDURES**

**Locations:** City King St, City Queen, City Flinders.

**Pre-requisites:** HHD3204 Laser Safety and Light Based Treatments, HHD3224 Dermatology, or equivalents.

**Descriptions:** This unit builds on techniques covered in the Laser Safety and Light Based Treatments and sequencing as part of case management. Students will be monitored through the ongoing evaluation of treatments in progress and final evaluation of completed treatments. Practical application of advanced dermal treatment techniques will be undertaken. Specific techniques to support clinical procedures will include class 3b, class 4 lasers and IPL. This unit will also cover the underpinning knowledge of laser physics required to safely and effectively perform and manage laser and IPL procedures.

**Credit Points:** 12

**Learning Outcomes:** On successful completion of this unit, students are expected to be able to:
1. Explain codes of conduct in laser procedures as outlined in AS/NZS 4173:2004;
2. Explain the processes, including the physics, associated with laser and light based dermal treatments;
3. Perform dermal treatments using laser techniques as appropriate;
4. Appropriately and safely perform class 3b and class 4 lasers and IPL for a variety of dermal conditions;
5. Perform and manage light-based and laser dermal therapy treatments with safety and confidence.

**Class Contact:** 3 hours per week or equivalent

**Required Reading:** Reading materials will be provided by the lecturer in line with the different student projects.

**Assessment:** Assignment 2000 words written assignment 25%

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**HHD4144 INDEPENDENT RESEARCH 1**

**Locations:** City King St, City Queen, City Flinders.

**Pre-requisites:** Research Perspectives 1, or equivalent.

**Descriptions:** Students will be guided through the processes of developing a research project with specific emphasis on appropriate research design, seeking ethics approval and development of proposals. Aspects of methodology such as subject selection, use of appropriate tools and record keeping will also be discussed.

**Credit Points:** 12

**Learning Outcomes:** Students will gain experience in how to prepare and plan for a research project, by going through the process of developing a research proposal and making an application for ethics approval so that they are better prepared for future postgraduate study or for planning their own future research. (assessed via proposal and ethics).

**Class Contact:** 1 hour lecture and 2 hours of tutorial per week

**Required Reading:** How to Write Health Science Papers, Dissertations and Theses by Shane A Thomas (2004) Churchill Livingston.

**Assessment:** This unit has two (2) assessment items: Research Proposal (Students are to prepare a research proposal. 2000 words) 50% (P3, I3, W3, A3, C3, D3) Ethics document (students are to prepare and submit an ethics document)

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**HHD4185 CLINICAL DIAGNOSIS AND MANAGEMENT 5**

**Locations:** City Flinders.

**Pre-requisites:** HBOS Bachelor of Science - Clinical Sciences; or equivalent.

**Descriptions:** This unit comprises two modules: Module 1: Clinical Neurology; and Module 2: Diagnostic Imaging. The aims of this unit are to develop in students an integrated understanding of the nervous system, neuroanatomy and neurophysiology, neural function and the ability to apply this knowledge to clinical cases; and to instruct students in the reading of radiographs, MRI, CT, ultrasound, bone scans, and other diagnostic images for the diagnosis of congenital anomalies and normal variants, traumatic injuries, scoliosis and infections.

**Credit Points:** 12

**Learning Outcomes:** On successful completion of this unit, it is expected that students will be able to:
- Explain the gross and developmental anatomy of the nervous system (module 1);
- Explain the functioning of the nervous system at gross and neural levels (module 1);
- Apply knowledge in clinical neurology to clinical cases commonly seen in osteopathic practice (module 1);
- Identify normal and pathological anatomy on diagnostic images (module 2);
- Competently read radiographs, MRI, CT, ultrasound, bone scans, and other diagnostic images for the diagnosis of congenital anomalies and normal variants, traumatic injuries, scoliosis and infections (module 2);
- Recognise particular disease states from the identification of abnormalities on scans (module 2).

**Class Contact:** Ninety-six (96) hours or equivalent normally spread over one semester comprising lectures, tutorials, workshops and practical classes. Practical sessions have a hurdle requirement of at least 80% attendance.


**Assessment:** One mid-semester MCQ examination (Clinical Neurology 5%) One 1-hour laboratory examination (Clinical Neurology, 15%, hurdle requirement); one 15-minute oral examination (Diagnostic Imaging, 25%, hurdle requirement); one 1-hour written slide examination (Diagnostic Imaging, 25%, hurdle requirement); one 3-hour final written examination (Clinical Neurology, 30%, hurdle requirement).

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**HHD4204 DERMAL CLINICAL PRACTICE 2**

**Locations:** City King St, City Queen, City Flinders.

**Pre-requisites:** HHD4104 Dermal Clinical Practice 1, or equivalent.

**Descriptions:** In this unit students will begin to focus on a specific range of medical and therapeutic procedures with a view to specialisation of peri-operative support using clinical dermal therapy techniques. Topics include: procedures in reconstructive, plastic and cosmetic surgery; complications of reconstructive, plastic and cosmetic procedures; latex allergy; gloving and gawning; managing fragile skin and record keeping.

**Credit Points:** 6
Learning Outcomes: On successful completion of this unit, students are expected to be able to:

- Explain the processes expected in typical dermal therapy procedures;
- Correctly perform first aid procedures in the clinic as required;
- Explain and justify techniques for managing latex allergies within a dermal clinical setting;
- Explain the importance of sterile gloving and gowning in a medical setting;
- Perform and manage basic record keeping requirements in a medical setting.

Class Contact: Thirty-six (36) hours or equivalent for one semester comprising lectures, tutorials, and clinical placements.


Assessment: Assignment Written (2000 words) 40%

HHD4214 NUTRITION AND DERMAL THERAPIES

Locations: City King St, City Queen, City Flinders,

Pre-requisites: HHD3224 Dermatology, or equivalent.

Descriptions: In this subject students will further their understanding of the role of various vitamins and minerals food groups and nutritional supplements in promoting well-being. Students will also study the beneficial and deleterious effects of various diets on skin health and the relationship of nutritional eating patterns to conditions such as anorexia and bulimia. Topics include carbohydrates, lipids, proteins, energy balance, water soluble, vitamins, fat soluble vitamins, minerals, dieting, how to recognise the relationship between dieting disorders and skin conditions, referrals, nutritional status of the skin, discussions on popular diets, advantages and disadvantages, client management of specific dieting needs in respect of vitamins and minerals the effects of excessive amounts of vitamins and minerals.

Credit Points: 6

Learning Outcomes: On successful completion of this unit, it is expected that students will be able to: be aware of various common conditions, which may result from, or result in, important nutritional imbalances, which can adversely affect skin; recall and discuss the nutritional implications of various eating disorders; suggest appropriate client referral to specialist health practitioners; identify factors that promote nutritional well-being, conditions in which it is appropriate to provide nutritional advice to clients and the identification of situations in which is necessary to refer clients to specialist health practitioners.

Class Contact: 3 hours per week or equivalent for one semester comprising lectures and workshops. Students should reasonably expect to devote additional private contact hours of at least 2 times more than the stipulated class contact hours.


Assessment: 40% Assignment (Essay 2000 words)60% Written Examination (2.5 hours duration)

HHD4224 DERMAL CLINICAL PRACTICE 3

Locations: City King St, City Queen, City Flinders,

Pre-requisites: HHD3214 Electrically Based Dermal Treatments, HHD3234 Peeling Procedures, HHD3204 Laser Safety and Light Based Treatments, HHD4104 Dermal Clinical Practice 1, HHD4124 Lymphatic Procedures, HHD4134 Laser and Light Procedures, or equivalents.

Descriptions: This unit integrates dermal therapies theory and practice and gives students the opportunity to enhance their understanding by applying their skills in the clinical setting. The unit reinforces aspects of aseptic procedures, history taking, principles of diagnosis, treatment protocols, the range of treatment skills covered in the course thus far, legal issues and interpersonal and professional communication skills.

Credit Points: 12

Learning Outcomes: On successful completion of this unit, students are expected to be able to:

1. Apply theoretical knowledge gained from previous study in dermal therapies to clinical practice and cases that typically present within the clinic;
2. Communicate case material in a professional style sufficient to facilitate accurate, efficient and effective handover;
3. Work effectively within a team environment including mentoring junior students within the clinic;
4. Perform all treatments and other activities within the dermal teaching clinic to the standard of a qualified clinician.

Class Contact: Fifty-two (52) hours for one semester comprising lectures, tutorials, and clinical placements in an approved clinical setting as per rotating roster.


Assessment: Practicum Practical Assessments (Students are to perform selected procedures taught within the unit to professional dermal therapist standards) 50%

HHD4234 PROFESSIONALISM IN DERMAL PRACTICE

Locations: City King St, City Queen, City Flinders,

Pre-requisites: HHD3114 Workplace Issues in Dermal Practice

Descriptions: This unit is an integrating subject for the course and has been designed to provide students with a framework to link the main elements of the course. The subject enables students to enhance their critical thinking and integration of knowledge. Particular emphases will be given to 1) ethical and legal issues and dilemmas confronting dermal therapies and 2) networking with medical practitioners and other health professionals including referrals and approaches to establishing effective and safe working relationships. 3) Presenting research findings and clinical results.

Credit Points: 12

Learning Outcomes: The student will feel more confident in the understanding of what the course has given them, and how to apply that knowledge. Students will be better able to communicate and present ideas gained from the course not only to colleagues but also to health professionals and the general public. Legal and professional ethical issues related to the industry will also be considered.

Class Contact: 3 hours per week or equivalent


Assessment: 30% Assignment (Problem solving exercises - set by the lecturer 2000 words) 30% Written Examination (2.5 hours duration)40% Class presentation (A 20 minute presentation to the class on a set topic)

HHD4244 INDEPENDENT RESEARCH 2

Locations: City King St, City Queen, City Flinders,

Pre-requisites: HHD4144 Independent Research Project 1, or equivalent.

Descriptions: Students will be guided through the processes of developing a research project with specific emphasis on data collection, the use of appropriate statistical analyses and report writing.

Credit Points: 12

Learning Outcomes: Students will have gained greater experience in how to
undertake a research project so that they are better prepared for future postgraduate study, specifically relating to data collection and report writing. Students will also have a much deeper understanding of their chosen topic.

Class Contact: 3 hours per week or equivalent

Required Reading: How to Write Health Science Papers, Dissertations, and Theses by Shane A. Thomas (2004) Churchill livingston

Assessment: 100% - Research project report (Students will write a report as if it were to be submitted to a Journal. 5000 words)

HHD4286 CLINICAL DIAGNOSIS AND MANAGEMENT 6

Locations: City Flinders,

Pre-requisites: HHD4185 Clinical Diagnosis & Management 5; or equivalent.

Descriptions: This unit comprises three modules: Module 1: Neurological Assessment; Module 2: Diagnostic Imaging 2; and Module 3: Pharmacology 1.

Module 1: Neurological Assessment concentrates on a detailed clinical examination of the nervous system. Students will be trained in the advanced examination of the following neurological systems, structures and conditions: sensory, motor, cranial nerves, cerebral cortex, basal ganglia, cerebellum, upper and lower motor neurons, skeletal muscles, nerve damage in the upper and lower limb. The study of the key diagnostic procedures, tests and investigations used to diagnose pathology of the nervous system. The performance of a rapid, clinical, neurological screening test. The basic algorithm employed in the diagnosis of neurological disease. Advanced training in the use of equipment employed in the neurological clinical examination.

Module 2: Diagnostic Imaging 2 extends the reading of radiographs, MRI, CT, ultrasound, bone scans, and other diagnostic images for the diagnosis of arthritis, primary and secondary tumours, tumour-like disorders, metabolic, vascular, and endocrine diseases. Information on diagnostic images will include normal and pathological anatomy, and pathological features associated with particular disease states.

Module 3: Pharmacology 1 introduces the development and testing process for drugs. The scheduling system. Trends in drug research. The approval process and subsidy processes for drugs used and sold in Australia (module 3); Incorporate knowledge in anatomy and physiology when reading scans (module 2); Competently read radiographs, MRI, CT, ultrasound, bone scans, and other diagnostic images for the diagnosis of arthritis, primary and secondary tumours, tumour-like disorders, metabolic, vascular, and endocrine diseases (module 2); Discuss the development, testing, approval, scheduling and subsidy processes for drugs used and sold in Australia (module 3); Explain the basic methods of drug action and of pharmacological concepts such as pharmacokinetics and dynamics (module 3); Take and document a drug history. Explain the main classes, and practical uses, of drugs, herbs and supplements relevant to osteopathic practice (module 3).

Class Contact: Eighty four (84) hours or equivalent normally spread over one semester comprising lectures, tutorials, workshops and practical classes. Practical sessions have a hurdle requirement of at least 90% attendance.

Required Reading: Pharmacology for Health Professionals Bryant, B and Knights, K. 2nd Mosby, Australia

Assessment: Examination Module 1(Neurology) One 15-minute final practical exam (hurdle requirement) 20%
HHD5145 ADVANCED DERMAL APPLICATIONS 1

Locations: City King St, City Queen, City Flinders,

Pre-requisites: Nil

Descriptions: In this subject students will learn the theoretical dimensions of certain advanced dermal techniques. Knowledge to be developed in this unit includes the theory needed to perform injections relating to both dermal fillers, restorative and corrective treatments. Also covered is the theory behind the assessment for and application of advanced machine based Endermo-therapy based treatments for scar revision and burns therapy.

Credit Points: 12

Learning Outcomes: On successful completion of this unit the student will be able to:

• Discuss the theoretical consideration of performing injections.
• Explain and demonstrate the basic technique of injecting into the cutaneous and sub cutaneous regions.
• Discuss the theoretical considerations of advanced machine based Endermo therapy treatments.
• Discuss the health and hygiene requirements for performing injections.
• Discuss the hazards of performing advanced machine based Endermo therapy treatments and injections.

Class Contact: 6 hours per week or equivalent


Assessment: 50% Practical Assessments (Students are to perform procedures taught within the unit to dermal therapist standards) 30% Assignment (Essay on a topic set by the lecturer 2000 words) 20% Written Examination (Combination of MCQ and SA)

HHD5155 PROFESSIONAL DERMAL ISSUES 1

Locations: City King St, City Flinders, St Albans,

Pre-requisites: Nil

Descriptions: This subject will consider the idea of what is generally considered aesthetic pleasing in society. Cultural differences, biological implications, psychological influences and mathematical and proportional concepts impacting on the idea of beauty will be covered. Discussions on decisions to recommend treatment and when to refuse treat and how to approach these difficult areas will also be considered. Ethics in oquence of aesthetic treatments will also be considered. Legal issues regarding these new forms of treatment and record keeping, will also be covered so that the student will know what legal parameters they can work in and how to keep up to date with any changes in law.

Credit Points: 12

Learning Outcomes: The student will be able to identify the main factors that determine beauty in humans and why these factors are relevant, they will then be able to make better judgements on what is aesthetically pleasing and apply those concepts to their treatments. Students will also have a much fuller understanding of health laws and what their limitations are to these new treatments that they will be providing.

Class Contact: 3 hours per week or equivalent + online discussions


Assessment: 30% Assignment (Essay on a topic set by the lecturer 2000 words) 40% Written Examination (Combination of MCQ and SA)30% Class presentation (A 10 minute presentation to the class on a set topic)

HHD5165 ADVANCED CLINICAL PRACTICE 1

Locations: City King St, City Queen, City Flinders,

Pre-requisites: Nil

Descriptions: In this unit student will undertake a series of lectures in the beginning of the semester to prepare them for later work in the teaching clinic. Record keeping, infection control and clinical work practices will be covered. Students will then be able to provide services to the public to apply the techniques that they have been taught within the program. Students will begin the process of monitoring a case so that they can write up a case report in the following unit.

Credit Points: 12

Learning Outcomes: The student will feel confident in applying the techniques covered, in a clinical setting. Students will be able to apply their knowledge of infection control, record keeping and other clinically related matters.

Class Contact: 3 hours per week or equivalent + practice


Assessment: 50% Practical Assessments (Students are to perform procedures taught within the unit to dermal therapist standards) 50% Assignment (Record keeping information, 2000 words)

HHD5187 CLINICAL DIAGNOSIS AND MANAGEMENT 7

Locations: City Flinders, St Albans,

Pre-requisites: HHD4286 Clinical Diagnosis & Management 6; or equivalent.

Descriptions: Module 1: Diagnostic Imaging 3 reviews pathologies by region using all imaging modalities; skull, cervical spine, thoracic spine, chest, lumbar spine; abdomen including foetal screening; pelvis and hip; upper and lower limb. Module 2: Diagnosis and Management PBL 1 concentrates on relevant issues and clinical presentations of conditions typically seen in paediatrics, obstetrics, otolaryngology, psychiatry; clinical tests and conventional medical management of those conditions; more serious disorders in obstetrics, paediatrics and psychiatry; specific areas that impact on osteopathic diagnosis and management. Module 3: Nutrition and Diet 1 considers carbohydrates, fats, proteins, vitamins, minerals; the healthy diet; diet and disease; naturopathic concepts; the role of various nutrients and nutritional status in both health and disease; the concept of food as medicine; nutritional deficiencies and eating disorders; current recommendations for nutritional management of some common disease states; methods used for assessing food safety; principles of food hygiene. The role of macronutrients and micronutrients in the body is considered and an optimal diet for Australians is described. The role of food in lifestyle diseases, and the nutritional management of these diseases, what constitutes a balanced diet and important nutritional issues for Australians will be discussed.


Credit Points: 12

Learning Outcomes: On successful completion of this unit, students are expected to be able to:

• Distinguish amongst normal changes and typical and atypical pathological changes on diagnostic images (module 1);
• Determine when diagnostic images are clinically indicated (module 1);
• Discuss the actions, interactions and adverse effects of the drugs/supplements
• Explain and predict the actions, interactions and adverse effects of the major drugs commonly seen in osteopathic practice (module 2);
• Explain the conventional management of paediatric, obstetric, ENT and psychiatric conditions typically presenting in osteopathic practice (module 2);
• Explain serious and common disorders in obstetrics, paediatrics and psychiatry may impact on osteopathic practice (module 2);
• Discuss potential problems in osteopathy for the professional and the profession, and explore different ways of effectively responding to those problems (module 2);
• Evaluate the role of nutrients in health and disease (module 3);
• Recognize and respond appropriately to patients with nutritional deficiencies and eating disorders (module 3);
• Explain the impact of nutritional status in specific clinical conditions relevant to the practising osteopath (module 3);
• Relate the methods used for assessing food safety and the principles of food hygiene (module 3);
• Explain and predict the actions, interactions and adverse effects of the major drugs commonly seen in osteopathic practice (module 4);
• Explain the referrals procedures and ethical issues in cases where medications may be causing health problems (module 4);
• Discuss the actions, interactions and adverse effects of the drugs/supplements for the management of cardiac, gastrointestinal, respiratory and musculoskeletal conditions (module 4).

Class Contact: One hundred and eight (108) hours or equivalent normally spread over one semester comprising of lectures, tutorials and workshops.

It is expected that students will complete a minimum of 24 hours per semester in self directed learning.

Students should have access to a copy of the most recent MIMS or the Australian medicines handbook available from Australian Medicines Handbook Web site, http://www.amh.org.au
Pharmacology for Health Professionals Bryant, B. & Knights, K. 2nd Mosby, Australia

Assessment: Examination 15-minute final oral exam (diagnostic imaging, hurdle requirement) 10%

HHDS235 DERMAL PHARMACOLOGY

Locations: City King St, City Queen, City Flinders,

Pre-requisites: Nil

Descriptions: This subject will give the students a much greater understanding of the chemistry and pharmacology from that introduced at the undergraduate level. Various forms of chemicals and drugs they will be using on patients or that patients may already be taking will be considered with regard to the advanced dermal therapies they will be applying. Knowledge to be developed will be chemistry of substances used in advanced dermal therapies, skin and underlying biochemistry, percutaneous absorption, toxicology and chemical interactions.

Credit Points: 12

Learning Outcomes: On successful completion of this unit the student will be able to:
• Discuss in detail skin and its underlying structures biochemistry and issues of chemical interaction of substances introduced to the skin and sub-cutaneous structures.
• Discuss issues of toxicology related to the use of substances, such as injectables in advanced dermal therapies.
• To explain the process and issues relating to percutaneous absorption.
• To discuss and differentiate between the chemical composition of substances used in advanced dermal therapies.

Class Contact: 6 hours per week or equivalent


Assessment: 60% Written Examination (3 hours duration)40% Reading exercises (Composed on a series of short answer questions relating to selected journal articles)

HHDS245 ADVANCED DERMAL APPLICATIONS 2

Locations: City King St, City Queen, City Flinders,

Pre-requisites: Nil

Descriptions: This subject will build on and extend the knowledge gained in advanced dermal therapies 1. Knowledge to be developed will include practical application of advanced machine based Endermol therapy treatments and injectables for cosmetic, restorative and corrective purposes. Knowledge of the hazards and contraindications associated with the use of injectables in advanced dermal techniques will be covered. Treatment protocols will be developed for the use of these advanced dermal techniques.

Credit Points: 12

Learning Outcomes: On successful completion of this unit the student will be able to:
• Discuss issues involved with the use of injectables in dermal techniques.
• Discuss the effects of using injectable substances for aesthetic purposes.
• Discuss the affect of advanced machine based Endermol therapy treatments.
• Demonstrate an understanding of the application of advanced machine based Endermol therapy treatments for lymphedema, post surgery applications and other related modalities.
• Demonstrate an understanding of the use of injectable substances in advanced dermal therapies.

Class Contact: 6 hours per week or equivalent

Assessment: 50% Practical Assessments (Students are to perform procedures taught within the unit to dermal therapist standards) 30% Assignment (Essay on a topic set by the lecturer 2000 words) 20% Written Examination (Combination of MCQ and SA)

**HHD5255 PROFESSIONAL DERMAL ISSUES II**

Locations: City King St, City Queen, City Flinders,

Pre-requisites: Nil

Descriptions: In this unit students will consider the psychological impact a severe trauma has on peoples cognition when that trauma greatly affects their appearance. Other related psychological conditions will also be considered. Better communication and empathy will be addressed to help deal with these situations. Discussions of specific cases and various professional approaches will also be discussed, highlighting a best practice model. Students will also go through the process of writing a case report based on these new treatments for a private health insurance company or a medical practitioner.

Credit Points: 12

Learning Outcomes: The student will be better able to communicate with clients that may have suffered a severe trauma and understand the psychological impact such an event would have on them. Students will be further able to discuss cases in a professional forum and have a greater understanding of what are professional standards of sharing information. Students will be able to write case reports at a medico-legal standard.

Class Contact: 3 hours per week or equivalent + online discussions


Assessment: 30% Assignment (Essay on a topic set by the lecturer 2000 words) 40% Case Report (Medico Legal case report 2000 words) 30% Case Critique (students are to critique a selected case 1000 words)

**HHD5265 ADVANCED CLINICAL PRACTICE II**

Locations: City King St, City Queen, City Flinders,

Pre-requisites: Nil

Descriptions: In this unit student will undertake a series of lectures in the beginning of the semester to prepare them for their written case study, (the case being obtained from the teaching clinic). Students will continue to deepen their knowledge on record keeping, infection control and clinical work practices. Students will then provide a wider range of services to the public to apply the techniques that they have been taught within the program. Students will continue the process of monitoring a case so that they can write up a case report.

Credit Points: 12

Learning Outcomes: The student will feel even more confident in applying a wider range of techniques, in a clinical setting. Students will be able to further their knowledge of infection control, record keeping and other clinically related matters.

Class Contact: 3 hours per week or equivalent + practice


Assessment: 50% Practical Assessments (Students are to perform procedures taught within the unit to dermal therapist standards) 50% Assignment (Case study, 3000 words)

**HHD5288 CLINICAL DIAGNOSIS AND MANAGEMENT 8**

Locations: City Flinders,

Pre-requisites: HHD5187 Clinical Diagnosis & Management 7, or equivalent.

Descriptions: This unit comprises two modules: Module 1: Diagnosis and Management - Problem Based Learning 2; and Module 2: Nutrition and Diet. Module 1: Diagnosis and Management - PBL 2 discusses relevant issues and clinical presentations of conditions typically seen in gerontology; clinical tests and conventional medical management of those conditions; specific areas in musculoskeletal medicine and gerontology that impact on osteopathic diagnosis and management. Module 2: Nutrition and Diet considers nutrition in pregnancy, paediatric nutrition, fad diets, traditional cuisines, sports nutrition, giving dietary advice, nutrition and cancer, nutrition and arthritis, food law and labelling, food allergy and intolerance, nutrition issues for women, nutrition and the elderly.

Credit Points: 12

Learning Outcomes: On successful completion of this unit, students are expected to be able to:

- Elicit and interpret clinical signs and symptoms pertinent to conditions typically seen in gerontology, and to more serious and specific disorders in and musculoskeletal medicine (module 1);
- Interpret clinical tests and special investigations commonly used in the diagnosis of conditions typically seen in gerontology, and musculoskeletal medicine (module 1);
- Generate a primary diagnosis and a list of differential diagnoses consistent with typical presentations common in gerontology, and musculoskeletal medicine (module 1);
- Explain the medical management of various conditions typically presenting in osteopathic practice (module 1);
- Discuss how the serious and common disorders and the specialized areas of medical practice (gerontology, and musculoskeletal medicine) may impact on osteopathic practice (module 1);
- Apply knowledge, appropriate communications skills and critical reasoning skills consistent with professional osteopathic standards expected during patient consultations (module 1);
- Discuss potential professional problems and explore different ways of effectively responding to them (module 1);
- Function as practitioners within a multi-disciplinary health care team (module 1);
- Function as practitioners who can work independently within the scope of osteopathic practice (module 1);
- Evaluate the role of nutrients in health and disease (module 2);
- Explain the impact of nutritional status in specific clinical conditions relevant to the practicing osteopath (module 2);
- State current recommendations for the nutritional management of some common and serious disease states (module 2);
- Discuss nutritional issues relevant to children, pregnant women and elderly adults (module 2).

Class Contact: Seventy-two (72) hours or equivalent normally spread over one semester comprising lectures, tutorials, workshops and self-directed learning.


Assessment: Assignment Written (1500 words) (Nutrition and Diet) 20%
HHK4101 RESEARCH METHODS

Locations: St Albans,
Pre-requisites: Nil

Descriptions: Evaluation of the health care professionals role in the research process and the significance of research to health care. Discussion of the different trends and issues within health care research. Exploration of legal and ethical considerations in research. Examination of qualitative and quantitative research methods. Consideration of how research ideas/questions can be generated and which research methodology may be appropriate. Data analysis and Computation.

Credit Points: 12

Learning Outcomes: To be advised.

Class Contact: Twenty (20) hours or equivalent for one semester comprising lectures, seminars and self-managed learning activities.


Assessment: Seminar presentation with staff and peer assessment (50%); written assignment (50%). To obtain a Pass in the subject, a pass must be gained for each component of assessment. Failed assessment item (written assignment) may be re-attempted and resubmitted once only. Maximum possible marks to be obtained on any resubmission will be 50%.

HHI4005 SCHOOLS OF THOUGHT IN CHINESE HERBAL MEDICINE

Locations: St Albans,
Pre-requisites: HHI3001 Chinese Herbal Medicine Practice; or equivalent.

Descriptions: The emphasis of this subject is to look at the practical ways in which classical schools of thought have influenced the practice of Internal Medicine. This subject will explore the Cold Injury School, He Jian School, Yi Shui School, Pathogen attacking School, Dan Xi School, Warming and Reincorporating School, Warm Disease School, Blood Stasis School and other influential approaches. The perspectives of Wu Shiji's External Medicine and Chen Shigong's Wei Ke will also be introduced.

Credit Points: 6

Learning Outcomes: To be advised.

Class Contact: Thirty (30) hours or equivalent for one semester comprising lectures and self-managed learning activities. This subject will be delivered in its entirety before the mid-semester break to allow students to undertake their final clinical internship in China.


Assessment: One class presentation (50%); one written assignment (1000 words) (50%). To obtain at least a Pass in the subject, normally all components of assessment must be attempted and passed. Failed assessment item (assignment) may be re-attempted and resubmitted once only. Maximum possible marks to be obtained on any resubmission will be 50%.

HHK4004 SCHOOLS OF THOUGHT IN ACUPUNCTURE

Locations: St Albans,
Pre-requisites: HHK3002 Acupuncture and Therapeutic Applications; or equivalent.

Descriptions: Detailed explorations of a broad range of schools of thought from classical and contemporary Chinese medical literature, other Oriental and Western applications. Emphasis will be given to understanding these approaches and their relevance in a contemporary Australian clinical setting. Areas such as Zi wu liu zhu, ling gui ba fa, yuan wu bi lei, the application of the 'Ghost Points' and Japanese approaches are addressed. Special emphasis is given to clinical concerns connected to the notion of two important Chinese medical ideas: dispersing xie Qi and supporting zheng Qi.

Credit Points: 6

Learning Outcomes: To be advised.

Class Contact: Twenty (20) hours or equivalent for one semester comprising lectures, seminars and self-managed learning activities. This subject will be delivered in its entirety before the mid-semester break to allow students to undertake their final clinical internship in China.


Assessment: One class presentation (50%); one assignment (1000 words) (50%). To obtain at least a Pass in the subject, normally all components of assessment must be attempted and passed. Failed assessment item (assignment) may be re-attempted and resubmitted once only. Maximum possible marks to be obtained on any resubmission will be 50%.

HHL4181 RESEARCH 1

Locations: City Flinders, St Albans,
Pre-requisites: HBOS Bachelor of Science - Clinical Sciences; or equivalent.

Descriptions: Review of scientific methods; quantitative and qualitative research paradigms; data sampling and collection; questionnaire design; outcome measures used in manual therapy research; qualitative methods: case study, grounded theory, ethnography, focus group; ethical issues and evaluation of research papers; data analysis: descriptive and inferential statistics, correlations and hypothesis testing.

Credit Points: 12

Learning Outcomes: On successful completion of this unit, it is expected that students will be able to:

• Evaluate different types of statistical designs;
• Explain research methods relevant to research in osteopathy and related health fields;
• Identify ethical requirements in the conduct of research;
• Critically appraise literature in the field of health science;
• Independently write a research proposal;
• Present a research proposal in an oral format to peer review.

Class Contact: Sixty (60) hours or equivalent normally spread over one semester comprising lectures, tutorials and workshops.


Assessment: Selection of topic and supervisor form (hurdle requirement); written research proposal (3000-5000 words) (50%) (hurdle requirement); one oral PowerPoint presentation of proposal (20%); one 2-hour written examination (30%) (hurdle requirement).

HHL4282 RESEARCH 2

Locations: City Flinders, St Albans,
Pre-requisites: HHL4181 Research 1; or equivalent.

Descriptions: Extension and consolidation of data analysis methods. Quantitative data analysis: revision of descriptive and inferential statistics, correlations and
hypothesis testing, general linear model, power and effect, analysis of variance and covariance multivariate designs, nonparametric data analysis and selection of nonparametric tests, practical use of the SPSS statistical computer package. Qualitative data analysis: major qualitative methodologies, techniques in data collection and analysis.

Credit Points: 12

Learning Outcomes: On successful completion of this unit, it is expected that students will be able to:

- Explain data analysis methods relevant to research in osteopathy and related health fields;
- Describe detailed methods of qualitative and quantitative statistical analysis;
- Use a statistical computer package for data analysis;
- Complete a written ethics application for a research proposal.

Class Contact: Sixty (60) hours or equivalent normally spread over one semester comprising lectures, tutorials, workshops and self-directed learning.


Assessment: Submission of a written ethics application (hurdle requirement); one written assignment (40%); one 2-hour written examination (60%).

HHL5183 RESEARCH 3

Locations: City Flinders, St Albans,

Pre-requisites: HHL4282 Research 2; or equivalent.

Descriptions: Following receipt of ethics committee approval, students will complete data collection and analysis appropriate to their individual research projects and write a draft of the thesis, which in its final form will be a 12,000-20,000 word thesis of a standard consistent with publication in a peer reviewed journal.

Credit Points: 12

Learning Outcomes: On successful completion of this unit, it is expected that students will be able to:

- Independently progress the data collection and analysis phases of research;
- Produce a working draft of a thesis.

Class Contact: Sixty (60) hours or equivalent normally spread over one semester comprising independent research, meetings with supervisors, and tutorials and workshops as required.


Assessment: Satisfactory progress report from supervisor(s) (hurdle requirement); one oral PowerPoint presentation of project (20%) (hurdle requirement); one minor thesis (12,000-20,000 words) (80%) (hurdle requirement). Examination of the minor thesis will be in accordance with the policies outlined by the Faculty of Health, Engineering and Science and the School of Health Sciences.

HHL5284 RESEARCH 4

Locations: City Flinders, St Albans,

Pre-requisites: HHL5183 Research 3; or equivalent.

Descriptions: Students having undertaken an individual research project in earlier HHL4181, HHL4282 & HHL5183 Research units will use this unit to complete the (12000-20000 word) minor thesis component of the degree. The thesis will provide evidence of independent academically rigorous research, which demonstrates the ability to define a problem, undertake a detailed literature review, develop a research design appropriate to the topic and collect and analyse, interpret and present data. The thesis should demonstrate a high standard of written communication skills consistent with publication in a peer reviewed journal. Presentation of the thesis should be in a conventional scientific format. An oral PowerPoint presentation is also required.

Credit Points: 12

Learning Outcomes: On successful completion of this unit, it is expected that students will be able to:

- Independently produce a scholarly piece of original writing (thesis of 12,000-20,000 words) relevant to the discipline of health science;
- Engage in further research activities and research training.

Class Contact: Sixty (60) hours or equivalent normally spread over one semester comprising independent research, meetings with supervisors, and tutorials and workshops as required.


Assessment: Satisfactory progress report from supervisor(s) (hurdle requirement); one oral PowerPoint presentation of project (20%) (hurdle requirement); one minor thesis (12,000-20,000 words) (80%) (hurdle requirement). Examination of the minor thesis will be in accordance with the policies outlined by the Faculty of Health, Engineering and Science and the School of Health Sciences.

HHM6800 RESEARCH THESIS (FULL-TIME)

Locations: Footscray Park,

Pre-requisites: Eligibility for entry to a Masters by Research or Doctor of Philosophy program.

Descriptions: This subject, the aim of which is to enable students to competently research an area of study utilising knowledge and skills gained in previous studies, consists of a project carried out by students on an individual basis. The project is expected to be an investigation of an approved topic, followed by the submission of a suitably formatted thesis in which the topic is introduced and formulated; the investigation described in detail; results and conclusions from the study elaborated; and an extended discussion presented. Students may be required to undertake some lecture courses, as specified at the time of commencement.

Credit Points: 48

Learning Outcomes: To be advised.

Class Contact: Independent research in addition to regular meetings with the student supervisors.

Required Reading: To be advised by supervisor.

Assessment: The thesis will normally be assessed by at least two expert examiners from an appropriate area of expertise.

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The equivalence of 39 hours per semester delivered in burst mode.

Class Contact: Independent research in addition to regular meetings with the student supervisors.

Pre-requisites: Nil.

Description: This subject, the aim of which is to enable students to competently research an area of study utilising knowledge and skills gained in previous studies, consists of a project carried out by students on an individual basis. The project is expected to be an investigation of an approved topic, followed by the submission of a suitably formatted thesis in which the topic is introduced and formulated; the investigation described in detail; results and conclusions from the study elaborated; and an extended discussion presented. Students may be required to undertake some lecture courses, as specified at the time of commencement.

Credit Points: 24

Learning Outcomes: To be advised.

Class Contact: Independent research in addition to regular meetings with the student supervisors.

Required Reading: To be advised by supervisor.

Assessment: The thesis will normally be assessed by at least two expert examiners from an appropriate area of expertise.

HHN0021 COUNSELLING SKILLS FOR NATURAL MEDICINE PRACTITIONERS

Locations: St Albans

Pre-requisites: Nil.

Description: An introduction to the role of the counsellor and relationship between the client and practitioner. The following theories will be covered: Psychoanalytic, Adlerian, Existential, Person Centred, Gestalt, Reality, Behavioral, Cognitive, Family systems, Ego State Therapies, as well as meditation, relaxation therapy. Ethical and legal issues of counselling.

Credit Points: 12

Learning Outcomes: To be advised.

Class Contact: The equivalence of 39 hours per semester delivered in burst mode over two weeks or over one semester of 13 weeks.


Assessment: Seminar presentation (15%); class participation (25%); written theory assignment (1500 words) (40%); reflective journal (20%). A pass must be gained for each component of the assessment.

HHO1171 OSTEOPATHIC SCIENCE 1

Locations: City Flinders

Pre-requisites: Nil.

Description: This unit comprises three modules: Module 1: Technique; Module 2: Palpation; and Module 3: History and Principles. Module 1: Students will continue to develop osteopathic diagnostic skills, palpatory skills including awareness of normal and abnormal tissue characteristics, and articulatory technique skills applied to the following musculoskeletal regions: thorax, lumbar, pelvis and lower limb. Module 2: The Technique and Palpation components will augment and reinforce anatomy presented in the unit Anatomy 2. Module 3: Continued development of the conceptual framework of osteopathy and an understanding of osteopathic history and philosophy.

Credit Points: 12

Learning Outcomes: On successful completion of this unit, it is expected that students will be able to:

• Discuss osteopathic principles at a level higher than basic;
• Name, identify and palpate the major anatomical structures and landmarks;
• Describe the major anatomical structures and landmarks, including in plain language;
• Demonstrate soft tissue and articulatory techniques for prescribed areas of the musculoskeletal system: thorax, lumbar, pelvic and lower limb;
• Adapt osteopathic soft tissue and articulatory techniques to accommodate patient’s needs and preferences.
Class Contact: Seven (7) hours per week or equivalent for one semester comprising lectures and practical classes. Practical sessions have a hurdle requirement of at least 90% attendance.


Assessment: Participation in practical sessions with at least 90% attendance unless well-documented acceptable reasons are provided (hurdle requirement); one combined practical and oral mock examination (OSCE format) (Technique) (pass/fail formative assessment); three quizzes (History and Principles) (pass/fail) (hurdle requirement); one peer-assessed written assignment (History and Principles) (pass/fail) (hurdle requirement); one 40-minute combined practical and oral examination (OSCE format) (20 minutes Technique; 20 minutes Palpation) (pass/fail) (hurdle requirement).

Learning outcomes:

- Students will be able to:
  - Explain the biomechanical principles underlying the use of HVLA thrust techniques to the spine;
  - Demonstrate with commentary and perform HVLA thrust techniques to the spine safely whilst taking into consideration both patient and operator comfort;
  - Explain the principles of regional peripheral examination;
  - Demonstrate with commentary and perform examinations of the peripheral regions;
  - Discuss presentations of common osteopathic conditions and their diagnosis;
  - Explain the major contraindications to osteopathic treatment in relation to the various techniques taught;
  - Discuss the requirements and considerations for patient and operator safety and comfort;
  - Contrast principles and practices of osteopathic medicine from allopathic and other forms of complementary medicine.

Class Contact: Six (6) hours per week or equivalent for one semester comprising lectures and practical classes. Practical sessions have a hurdle requirement of at least 90% attendance.


Assessment: Participation in practical sessions with at least 90% attendance unless well-documented acceptable reasons are provided (hurdle requirement); one 20-minute practical examination (HVLA) (pass/fail) (hurdle requirement); one 15-minute practical examination (Peripheral Assessment) (pass/fail) (hurdle requirement); one 3-hour written examination (Osteopathic Science Theory) (pass/fail) (hurdle requirement).

HHO2274 OSTEOPATHIC SCIENCE 4

Locations: City Flinders, St Albans,

Pre-requisites: HHO2173 Osteopathic Science 3; or equivalent.

Descriptions: This unit comprises four modules: Module 1: High Velocity Low Amplitude Thrust Technique; Module 2: Peripheral Joint Technique; Module 3: Osteopathic Science Theory; and Module 4: History and Principles. The content will include: further development of osteopathic manual soft tissue skills and the uses of leverage in treatment regimes. Continued refinement of treatment approaches to effect reflex and structural changes in muscle. Introduction to the use of high velocity thrust techniques applicable to the spine and periphery. Principles of examination of the peripheral regions. Stress is placed upon observation prior to palpation and the need to recognise the anatomical relationships on one region of the body to others. Osteopathic principles and application of forces to all soft tissues and joints of the body to normalise mechanics. Contraindications to the use of osteopathic techniques. Application and interpretation of tests and protocols relating to patient safety. Further exploration of the principles and practice of osteopathic medicine as distinct from allopathic and other complementary therapies. The evidence base underpinning osteopathic principles and somatic dysfunction. Common conditions seen in osteopathic diagnosis and the diagnosis of these conditions.

Credit Points: 8

Learning Outcomes: On successful completion of this unit, it is expected that students will be able to:

- Apply the biomechanical principles underlying the use of HVLA thrust techniques to the spine;
- Demonstrate with commentary and perform HVLA thrust techniques to the spine safely whilst taking into consideration both patient and operator comfort;
- Justify the principles of regional peripheral examination;
- Demonstrate with commentary and perform examinations of the peripheral regions;
- Explain the possible and probable therapeutic mechanisms of common osteopathic techniques;
- Develop osteopathic case-note taking skills;
- Discuss the traditional osteopathic principles and philosophy;
- Evaluate traditional osteopathic concepts and theories in terms of currently-available scientific evidence;
- Explain current scientific concepts and theories relevant to the manual therapies in general;
- Discuss the extent of the evidence-based approach to medicine and the limited support currently available to the manual therapies;
- Evaluate scientific and magazine articles on osteopathic principles, philosophy and practice.
Class Contact: Five (5) hours per week or equivalent for one semester comprising lectures and practical classes. Practical sessions have a hurdle requirement of at least 90% attendance.


Assessment: Participation in practical sessions with at least 90% attendance unless well-documented acceptable reasons are provided (hurdle requirement); one 20-minute practical examination (HVLA) (pass/fail) (hurdle requirement); one 15-minute practical examination (Peripheral Assessment) (pass/fail) (hurdle requirement); one 3-hour written examination (Osteopathic Science Theory) (pass/fail) (hurdle requirement); four 30-minutes quizzes (History and Principles) (pass/fail each) (hurdle requirement).

HHO3175 OSTEOPATHIC SCIENCE 5

Locations: City Flinders,

Pre-requisites: Successful completion of year 2 HBOS

Descriptions: This unit comprises three modules: Module 1: Osteopathic Assessment; Module 2: Muscle Energy Technique; and Module 3: Osteopathic Science Theory common conditions.

Module 1: Study of the components and development of diagnosis, and estimation of prognosis in osteopathic practice.

Module 2: Study of the principles, biomechanics, and safe performance of MET. Introduction, history and development, definition, classification of techniques, treatment principles, therapeutic mechanisms of MET. Myofascial approach: assessment and treatment of shortness and MNPs in lower and upper quarter. Motor recruitment assessment and treatment in the lower and upper quarter. Assessment and treatment of the cervical, thoracic and lumbar spine, rib cage, sacral and innominate dysfunctions, and shoulder.

Module 3: Clinical presentations in osteopathic practice, including peripheral joint injuries and common orthopaedic complaints.

Credit Points: 8

Learning Outcomes: On successful completion of this unit, students are expected to be able to:

- Discuss the skills and knowledge required to perform Muscle Energy Technique (MET);
- Discuss the therapeutic principles of MET;
- Explain the limitations of the MET paradigm in light of current evidence;
- Competently assess all regions of the musculoskeletal system for somatic dysfunction;
- Evaluate conditions commonly presenting in osteopathic practice for their suitability for MET;
- Competently and safely apply MET to any region of the musculoskeletal system;
- Explain the various models of osteopathic diagnosis, treatment and prognosis.

Class Contact: Five (5) hours per week or equivalent for one semester comprising lectures and practical classes. Practical sessions have a hurdle requirement of at least 90% attendance.


HHO3276 OSTEOPATHIC SCIENCE 6

Locations: City Flinders, St Albans,

Pre-requisites: HHO3175 Osteopathic Science 5; or equivalent.

Descriptions: This unit comprises three modules: Module 1: Advanced High Velocity Low Amplitude Technique (HVLA); Module 2: Muscle Energy Technique (MET); and Module 3: Osteopathic Science Theory common conditions.

Module 1: Advanced techniques, reviewing from Osteopathic Science 3 &amp; 4, study of the principles of HVLA thrust techniques for transitional areas and application of these techniques. Study of contraindications and safety issues in HVLA thrust techniques.

Module 2: Study of the components and development of diagnosis, and estimation of prognosis in osteopathic practice.

Module 3: Clinical presentations in osteopathic practice, including peripheral joint injuries and common orthopaedic complaints.

Credit Points: 8

Learning Outcomes: On successful completion of this unit, students are expected to be able to:

- Competently assess all regions of the musculoskeletal system for somatic dysfunction;
- Explain the major contraindications to osteopathic treatment in relation to the various techniques taught;
- Competently apply MET to any region of the musculoskeletal system;
- Competently demonstrate with commentary and perform HVLA thrust techniques to the spine safely whilst taking into consideration both patient and operator comfort;
- Explain HVLA of transitional regions;
- Justify various models of osteopathic diagnosis, treatment and prognosis.

Class Contact: Five (5) hours per week or equivalent for one semester comprising lectures and practical classes. Practical sessions have a hurdle requirement of at least 90% attendance.


Assessment: Other Participation in practical sessions with at least 90% attendance unless well-documented acceptable reasons are provided (hurdle requirement); Pass/Fail

HHO4187 OSTEOPATHIC SCIENCE 7

Locations: City Flinders, St Albans,

Pre-requisites: HBOS Bachelor of Science - Clinical Sciences; or equivalent.

Descriptions: Introduction to indirect techniques. Strain/counterstrain techniques and introduction to functional assessment and technique. Introduction to concepts
and principles of rehabilitation for specific injuries encountered in osteopathic practice. Assessment, treatment and rehabilitation of common injuries involving the ankle, calf, foot and knee. Acute and chronic injuries and principles of taping. Presentation of patient information. Case conferencing.

Credit Points: 8

Learning Outcomes: On successful completion of this unit, students are expected to be able to:

- Demonstrate an expanded range of technical manual therapy skills that includes counterstrain/positional release techniques;
- Discuss specific rehabilitation program principles for common upper and lower limb injuries;
- Explain the factors involved in the effective management of patients;
- Justify the importance of preventative care during rehabilitation.

Class Contact: Sixty (60) hours or equivalent normally spread over one semester comprising lectures, tutorials, workshops and practical classes. Practical sessions have a hurdle requirement of at least 90% attendance.


Assessment: Other Practical tasks (25% hurdle requirement) 25%

HHO4288 OSSEOPATHIC SCIENCE 8

Locations: City Flinders, St Albans,

Pre-requisites: HHO4187 Osteopathic Science 7; or equivalent.

Descriptions: Indirect techniques. Functional, fascial and Balanced Ligamentous Tension (BLT) techniques. Rehabilitation. Assessment, treatment and rehabilitation of injuries to the spine, pelvis and thorax. Rehabilitation after common surgical procedures to the spine, pelvis and thorax. Management of acute and chronic injuries. Presentation of patient information; case conferencing.

Credit Points: 8

Learning Outcomes: On successful completion of this unit, it is expected that students will be able to:

- Demonstrate a range of technical skills, including fascial and balanced ligamentous tension techniques;
- Discuss aspects of patient management, including those that may impact on the management of infants, children, the elderly and the infirm;
- Explain rehabilitation procedures for common conditions and surgical procedures affecting the spine, pelvis and thorax.

Class Contact: Sixty (60) hours or equivalent normally spread over one semester comprising lectures, tutorials, workshops and practical classes. Practical sessions have a hurdle requirement of at least 90% attendance.


Assessment: Two (2) written assignments (2000 words each) (each 25%, total 50%); one 20-minute practical skills test (50%) (hurdle requirement).

HHOS5280 OSSEOPATHIC SCIENCE 10

Locations: City Flinders, St Albans,

Pre-requisites: HHO5189 Osteopathic Science 9; or equivalent.


Credit Points: 12

Learning Outcomes: On successful completion of this unit, students are expected to be able to:

- Demonstrate an expanded range of technical skills, including the ability to assess and treat cranio-sacral conditions amenable to osteopathic treatment;
- Demonstrate the integration of a broad range of technical skills, including the ability to manage common injuries affecting the spine and pelvis; peripheral joints;
- Discuss sufficient business skills required to run a practice, including appropriate aspects of tax law and third party payer requirements.

Class Contact: Eight-four (84) hours or equivalent normally spread over one semester comprising lectures, tutorials, workshops and practical classes. Practical sessions have a hurdle requirement of at least 90% attendance.


Assessment: One written assignment (2000 words) (50%); one 20-minute practical skills examination (50%) (hurdle requirement).
FACULTY OF HEALTH, ENGINEERING AND SCIENCE

HHP1171 PHYSIOLOGY 1

Locations: City Flinders, St Albans,

Pre-requisites: Nil

Descriptions: An introduction to the basic principles and concepts of human physiology. Concepts include homeostasis, cellular physiology, blood and the body's natural defences, introduction to the nervous system, membrane and action potentials, transmission of nervous impulses, and muscle and skeletal physiology. Theoretical physiological knowledge is integrated with laboratory skills through the use of research questions and laboratory reports. Research skills development, including critical thinking and scientific writing, is incorporated throughout the unit.

Credit Points: 6

Learning Outcomes: On successful completion of this unit, students will be able to:

• Discuss the principles and concepts of basic physiological methodological format;
• Explain the major concepts involved in cellular physiology, the body's natural defences, blood cell development, establishment and alteration of the cell membrane potential, transmission of nervous impulses, and muscle physiology;
• Link theoretical physiology knowledge and laboratory skills;
• Apply scientific questioning to basic theoretical knowledge in physiology;
• Critically assess research papers and physiology research papers in particular;
• Produce laboratory reports and written critiques in a conventional scientific format.

Class Contact: Three (3) hours per week or equivalent for one semester comprising lectures and laboratory workshops. Practical sessions have a hurdle requirement of at least 90% attendance.


Assessment: Participation in practical sessions with at least 90% attendance unless well-documented acceptable reasons are provided (hurdle requirement); one written assignment (1200 words) (15%); five (5) laboratory practicals (3% each, total 15%); two 1-hour multiple choice question (MCQ) written examinations (10% each, total 20%); one 3-hour final written examination (50%).

HHP2172 PHYSIOLOGY 2

Locations: City Flinders, St Albans,

Pre-requisites: HHP1171 - PHYSIOLOGY 1 or equivalent.

Descriptions: This unit extends the principles and concepts of basic human physiology. Aspects of cellular and systems physiology are explained in the contexts of cardiac, circulatory and renal physiology. Development of critical thinking and research writing skills is continued. Unit content is specifically related to clinically relevant presentations in osteopathic practice.

Credit Points: 6

Learning Outcomes: On successful completion of this unit, students will be able to:

• Discuss the key principles and concepts of human physiology in relation to cardiovascular and renal physiology;
• Explain the major concepts involved in cardiovascular and renal physiology;
• Integrate theoretical cardiovascular and renal physiology knowledge with laboratory skills;
• Apply scientific questioning to basic theoretical knowledge of cardiovascular and renal physiology;
• Critically assess research papers and cardiovascular and renal physiology papers in particular;
• Produce laboratory reports and written critiques in a conventional scientific format.

Class Contact: Total of thirty-six (36) hours for one semester comprising lectures, tutorials and laboratory classes.


Assessment: Participation in practical sessions with at least 90% attendance unless well-documented acceptable reasons are provided (hurdle requirement). Laboratory Work: Five (5) laboratory reports 15%.

HHP2273 PHYSIOLOGY 3

Locations: City Flinders, St Albans,

Pre-requisites: HHP2172 Physiology 2; or equivalent.

Descriptions: This unit extends the principles and concepts of basic human physiology. Aspects of respiratory and gastrointestinal physiology. Critical thinking in human physiology is extended through the use of clinical case studies and the clinical case report. Material is specifically related to clinically relevant presentations in osteopathic practice.

Credit Points: 6

Learning Outcomes: On successful completion of this unit, students will be able to:

• Discuss the key principles and concepts of human physiology in relation to respiratory and gastrointestinal physiology;
• Explain the major concepts involved in respiratory and gastrointestinal physiology;
• Integrate theoretical knowledge on respiratory and gastrointestinal physiology with clinical cases;
• Apply scientific questioning to basic theoretical knowledge of respiratory and gastrointestinal physiology;
• Critically assess research and clinical report papers, and respiratory and gastrointestinal physiology papers in;
• Produce clinical case reports and written critiques on topics in respiratory and gastrointestinal physiology in a conventional scientific format.

Class Contact: Three (3) hours per week or equivalent for one semester comprising lectures and tutorial classes. Tutorial sessions have a hurdle requirement of at least 90% attendance.


Assessment: Participation in tutorial sessions with at least 90% attendance unless well-documented acceptable reasons are provided (hurdle requirement); one oral presentation of a case study (15%); written assignment (2000 words) (15%); two 1-hour multiple choice question (MCQ) tests (10% each, total 20%); one 3-hour written examination (50%).

HHP3174 PHYSIOLOGY 4

Locations: City Flinders,

Pre-requisites: HHP2273 Physiology 3; or equivalent.

Descriptions: This unit extends the principles and concepts of basic human physiology. Aspects of metabolic and endocrine physiology. Critical thinking in human physiology is extended through the use of clinical case studies and the clinical case report. Material is specifically related to clinically relevant presentations in osteopathic practice.

Credit Points: 6
Learning Outcomes: On successful completion of this unit, students are expected to be able to:

- Discuss the key principles and concepts of human physiology in relation to metabolism and endocrinology;
- Explain the major concepts involved in metabolism and endocrinology;
- Use theoretical knowledge on metabolism and endocrinology to explain clinical case presentations;
- Apply scientific questioning to basic theoretical knowledge of metabolism and endocrinology;
- Critically assess research and clinical report papers, and metabolism and endocrinology papers in particular;
- Produce clinical case reports and written critiques on topics in metabolism and endocrinology in a conventional scientific format.

Class Contact: Three (3) hours per week or equivalent for one semester comprising lectures and tutorials. Tutorial sessions have a hurdle requirement of at least 90% attendance.


Assessment: Participation in tutorial sessions with at least 90% attendance unless well-documented acceptable reasons are provided (hurdle requirement); one oral presentation of a case study (15%); written assignment (2000 words) (15%); two 1-hour multiple choice question (MCQ) written tests (10% each, total 20%); one 3-hour written examination (50%).

HHP5275 PHYSIOLOGY 5

Locations: City Flinders,
Pre-requisites: HHP3174 Physiology 4; or equivalent.
Descriptions: The introduction of the concepts and principles of exercise physiological and the methodology of exercise prescription in normal and special populations. Topics include cardiovascular and muscular responses and adaptations to exercise; exercise prescription principles, exercise prescription for normal and patient populations, principles of stretching and strengthening exercises. Clinical case studies relevant to osteopathic practice are used to extend critical thinking throughout this unit.

Credit Points: 6

Learning Outcomes: On successful completion of this unit, students are expected to be able to:

- Define the theoretical and practical concepts in exercise physiology and exercise prescription;
- Discuss the principles of exercise physiology and exercise prescription;
- Discuss the principles of prescribing exercise to special populations;
- Explain exercise prescription for specific patient groups;
- Discuss issues associated with acute sporting injuries;
- Develop and write exercise programs;
- Show familiarity with some sports medicine techniques.

Class Contact: Two (2) hours per week or equivalent for one semester comprising lectures, tutorials and practical sessions. Tutorial and practical sessions have a hurdle requirement of at least 90% attendance.


Assessment: Participation in tutorial and practical sessions with at least 90% attendance unless well-documented acceptable reasons are provided (hurdle requirement). Examination 15-minute combined oral and practical 30%.

HHP5101 FUNDAMENTALS OF EMERGENCY MANAGEMENT

Locations: On-line,
Pre-requisites: Appropriate Undergraduate qualification or equivalent
Descriptions: This subject will contain:

- The historical aspects of natural and human made disasters.
- The political, psychosocial and cultural context of disaster.
- Government and legislative frameworks and emergency management systems.

Credit Points: 12

Learning Outcomes: Upon successful completion of this subject the student will:

- Describe the historical aspects of natural and human made disasters.
- Define the terms: natural, human made, compensated, uncompensated, compound and simple disasters
- Describe the political, psychological and cultural context of disaster
- Discuss the political and legislative frameworks related to emergency management at a state, federal and international level.
- Describe emergency management systems that have evolved to address the prevention, management and recovery from disasters.
- The political, psychosocial and cultural context of disaster:
  - Describe pivotal events nationally and internationally that have impacted on the legislative frameworks underpinning disaster response and management.
  - Describe the role of governments and response agencies within the legislative framework.
  - Describe the impacts of terrorism on the evolution of emergency management systems.
  - Discuss the psychosocial and cultural impacts of disasters on community, governments and emergency service and recovery organisation personnel.
  - Describe the statutory powers of the emergency services in the context of a major incident.
  - Discuss concepts of emergency law as it applies to emergency and support services in the context of a major incident.
- Government and legislative frameworks and emergency management systems.
  - Describe the Federal State and Local government systems in Australia and discuss the impact of these systems on Emergency Management Preparedness Response and Recovery.
  - Describe the limits on Federal and State/Territory legislative power.
  - Discuss the implications of international relations on the disaster response process.
  - Discuss the role and involvement of the Australian Defence Force in Emergency Response.
  - Discuss the risk management approach to Emergency Management.

Class Contact: 3 hours of on-line lecture and 1 hour of on-line tutorial. Further contact with students will be via on-line chat rooms/discussions and via e-mail and telephone.


Assessment: To successfully complete this subject an aggregate mark of 50% must be achieved. Assessment will reflect the following Core Graduate Attributes. Students will:
- Identify and solve complex problems related to emergency management (P3).
- Locate, evaluate, manage and use information gained from a variety of sources and relate this information to emergency and disaster management (I3).
- Communicate with peers via on-line medium in formal and informal settings (O2).
- Synthesise complex material in the area of emergency and disaster management and communicate ideas at a professional level (W3).
- Manage time without guidance (A3).
- Undertake on-line group tasks and reflect upon issues in emergency and disaster management (C2).
- Apply and evaluate strategies relating to issues of social and cultural diversity in the emergency management context (D2).

Assignment Assessment will include two (2) three thousand (3000) word assignments with each worth 50% of the total mark (P3, I3, O2, W3, A3, C2, D2). 100%

HHP5102 DISASTER PLANNING AND PREVENTION

Locations: On-line,

Pre-requisites: Appropriate Undergraduate qualification or equivalent

Descriptions: This subject will contain:
- Risk assessment, mitigation and management models.
- Models of planning and prevention in the national and international context.
- Federal, State/Territory and Local Government disaster policy and plans.
- Roles and responsibilities of Government and Non-government agencies in disaster planning and prevention, in particular coordination, capability, capacity and interoperability.

Credit Points: 12

Learning Outcomes: Upon successful completion of this subject the student will:
Risk assessment, mitigation and management models.
- Define and describe risk management approaches to Emergency Management Planning and Prevention.
- Discuss the application of risk management in the context of Emergency Planning and Preparedness.
- Discuss risk management in the context of Emergency Management Planning and Prevention.
- Discuss disaster mitigation strategies and their application to Emergency Planning and Preparedness.
Models of planning and prevention in the national and international context.
- Define and describe national and international models of Emergency Management Planning and Prevention.
- Discuss the application of Emergency Management Planning and Prevention models in the context of the local environment.
- Discuss the critical considerations in counter disaster planning including disaster plans, crisis pressure and information management.
- Federal, State/Territory and Local Government disaster policy and plans.
- Discuss the global approach to Emergency Management Planning and Prevention.
- Discuss the application of policy and planning within the context of the students local environment.
- Evaluate the management of selected major incidents in relation to disaster plan activation and implementation.
- Explore the criteria for review of Emergency Management Plans, with reference to legislation that establishes the legal basis for planning.
- Roles and responsibilities of Government and Non-government agencies in disaster planning and prevention, in particular coordination, capability, capacity and interoperability.
- Describe and discuss the roles and responsibilities of Federal and State/Territory Government agencies in the disaster planning and prevention process, including Defence, health, ambulance, fire, police, State Emergency Service and essential service organisations.
- Describe and discuss the roles and responsibilities in the disaster planning and prevention process of non-government agencies.

Class Contact: 3 hours of on-line lecture and 1 hour of on-line tutorial. Further contact with students will be via on-line chat rooms/discussions and via e-mail and telephone.


Assessment: To successfully complete this subject an aggregate mark of 50% must be achieved. Assessment will reflect the following Core Graduate Attributes. Students will:
- Identify and solve complex problems related to emergency management (P3).
- Locate, evaluate, manage and use information gained from a variety of sources and relate this information to emergency and disaster management (I3).
- Communicate with peers via on-line medium in formal and informal settings (O2).
- Synthesise complex material in the area of emergency and disaster management and communicate ideas at a professional level (W3).
- Manage time without guidance (A3).
- Undertake on-line group tasks and reflect upon issues in emergency and disaster management (C2).
- Apply and evaluate strategies relating to issues of social and cultural diversity in the emergency management context (D2).

Assignment Assessment will include two (2) three thousand (3000) word assignments with each worth 50% of the total mark (P3, I3, O2, W3, A3, C2, D2). 100%
HHP5103 DISASTER PREPAREDNESS

Locations: On-line,

Pre-requisites: Appropriate Undergraduate qualification or equivalent

Descriptions: This subject will contain:
- Counter Disaster Training and Education.
- Community and other stakeholder engagement.
- Assessment of preparedness.
- Interagency liaison.
- International assistance liaison.
- Resource management.

Credit Points: 12

Learning Outcomes: Upon completion of this subject the student will:
- Describe Education and Training strategies to ensure effective management of all elements of disaster coordination.
- Discuss the application of Education and Training principles in disaster preparedness.
- Discuss the role of the community and other stakeholders in disaster preparedness.
- Discuss strategies for engagement of community and stakeholders in disaster preparedness.
- Discuss the roles and responsibilities of federal, state/territory, local government and individual agencies in disaster preparedness.
- Discuss principles of assessment of disaster preparedness and the application of these principles in their local environment.
- Discuss the principles of coordination and implementation of disaster exercises to test multi-agency disaster preparedness.
- Identify forums for communication between agencies to discuss disaster preparation.
- Discuss the process of engagement of other agencies in disaster preparation.
- Discuss the roles, responsibilities and obligations of federal, state/territory, local government and all agencies.
- Identify government / agency specific responsibilities for resource management in the context of disaster preparedness.

Class Contact: 3 hours of on-line lecture and 1 hour of on-line tutorial. Further contact with students will be via on-line chat rooms/discussions and via e-mail and telephone.


Assessment: Assessment will include two (2) three thousand (3000) word assignments with each worth 50% of the total mark (P3, I3, O2, W3, A3, C2, D2). To successfully complete this subject an aggregate mark of 50% must be achieved. Assessment will reflect the following Core Graduate Attributes. Students will:
- Identify and solve complex problems related to emergency management (P3).
- Locate, evaluate, manage and use information gained from a variety of sources and relate this information to emergency and disaster management (I3).
- Communicate with peers via on-line medium in formal and informal settings (O2).
- Synthesise complex material in the area of emergency and disaster management and communicate ideas at a professional level (W3).
- Manage time without guidance (A3).
- Undertake on-line group tasks and reflect upon issues in emergency and disaster management (C2).
- Apply and evaluate strategies relating to issues of social and cultural diversity in the emergency management context (D2).

HHP5104 DISASTER RESPONSE

Locations: On-line,

Pre-requisites: Appropriate Undergraduate qualification or equivalent

Descriptions: This subject will contain:
- Important characteristics of response
- Incident command systems
- Interagency communication
- Communication with the public and media
- Resource management
- Leadership in the disaster environment
- Common problems in disaster response
- Requirements for effective response
- Human factors decision making and problem solving
- Principles and aspects of response.

Credit Points: 12

Learning Outcomes: Upon completion of this subject the student will:
- Identify important characteristics of the disaster response
- Discuss common problems associated with disaster response
- Describe the attributes and requirements essential for effective response
- Discuss response operations
- Discuss human factors involved in crisis situations including decision making and problem solving
- Discuss resources relevant to an all hazards approach to disaster response
- Discuss strategies for communicating with the media and the community
- Discuss the importance of interagency communication and liaison
- Demonstrate effective communication strategies
- Describe various command systems and discuss the relevance of command systems to disaster response
- Describe the roles and responsibilities of selected emergency services agencies to the disaster response
- Outline the major considerations in disaster command and control
- Identify essential resources applicable to the disaster response
- Discuss the management of resources in a disaster situation
- Identify characteristics of effective leadership in a crisis situation
- Identify common problems encountered during the disaster response and discuss strategies to mitigate such problems
- Describe risk management principles and strategies associated with the disaster response
- Describe the roles and responsibilities of federal, state / territory and local governments in responding to a disaster
- Describe the principles of safety, communications and assessment.

Class Contact: Three (3) hours of on-line lecture and 1 hour of on-line tutorial. Further contact with students will be via on-line chat rooms/discussions and via e-mail and telephone.

Learning Outcomes: Upon successful completion of this subject the student will be able to:

- Describe the specific roles and responsibilities of selected specialist emergency service organisations.
- Describe the importance of inter-service communication, liaison and education.
- Identify key aspects of disaster planning, prevention, preparedness, response and recovery specific to each organisation.
- Describe common problems associated with multi-service response to a disaster.
- Identify strategies to improve multi-service communication and response.
- Demonstrate principles of effective disaster response from a multi-service perspective.
- Describe essential resources required by each emergency service organisation.
- Describe the principles of command and control from a multi-agency response.
- Demonstrate effective elements of command and control.

Class Contact: Three (3) hours of on-line lecture and 1 hour of on-line tutorial. Further contact with students will be via on-line chat rooms/discussions and via e-mail and telephone.


Assessment: Assessment will include two (2) three thousand (3000) word assignments with each worth 50% of the total mark (P3, I3, O2, W3, A3, C2, D2). To successfully complete this subject an aggregate mark of 50% must be achieved. Assessment will reflect the following Core Graduate Attributes. Students will:
- Identify and solve complex problems related to emergency management (P3).
- Locate, evaluate, manage and use information gained from a variety of sources and relate this information to emergency and disaster management (I3).
- Communicate with peers via on-line medium in formal and informal settings (O2).
- Synthesise complex material in the area of emergency and disaster management and communicate ideas at a professional level (W3).
- Manage time without guidance (A3).
- Undertake on-line group tasks and reflect upon issues in emergency and disaster management (C2).
- Apply and evaluate strategies relating to issues of social and cultural diversity in the emergency management context (D2).

HHP5205 SPECIALIST RESPONSE IN DISASTERS

Locations: On-line,

Pre-requisites: Appropriate Undergraduate qualification or equivalent

Descriptions: This subject will contain:

Characteristics of specialist response to a disaster situation including:
- Health
- Ambulance
- Police
- Fire
- Rural Fire
- Defence
- State Emergency Service
- Non-Government Organisations including, St John, Red Cross, Volunteer Rescue Association
- Volunteers.

Credit Points: 12

HHP5206 DISASTER RECOVERY

Locations: On-line,

Pre-requisites: Appropriate Undergraduate qualification or equivalent

Descriptions: This subject will contain:

- Significant issues from disaster analysis.
- The transfer from response to recovery.
• The basis for recovery action.
• Common issues and problems in the recovery process.
• Elements for an effective recovery.
• Human factors in recovery.
• Resources relevant to the recovery process.
• Analysis and projection of the recovery process.
• Describe psychosocial considerations in the recovery phase, including counselling and personal and community support.

Credit Points: 12

Learning Outcomes: Upon successful completion of this subject the student will be able to:
• Identify and describe salient points from previous disasters and relate these points to the recovery phase.
• Describe the key considerations when transferring from the response to the recovery phase.
• Describe principles of recovery action.
• Discuss common issues and problems encountered in the recovery phase.
• Describe elements required for an effective recovery.
• Identify and discuss the human factor to be considered in the recovery phase.
• Identify and describe resources essential for an effective recovery.
• Describe the requirements for the analysis of the recovery phase and describe key elements for projection for the disaster actions and the phases of emergency management.

Class Contact: Three (3) hours of on-line lecture and 1 hour of on-line tutorial. Further contact with students will be via on-line chat rooms/discussions and via e-mail and telephone.


Assessment: To successfully complete this subject an aggregate mark of 50% must be achieved.

Assessment will reflect the following Core Graduate Attributes. Students will:
• Identify and solve complex problems related to emergency management (P3).
• Locate, evaluate, manage and use information gained from a variety of sources and relate this information to emergency and disaster management (I3).
• Communicate with peers via on-line medium in formal and informal settings (O2).
• Synthesise complex material in the area of emergency and disaster management and communicate ideas at a professional level (W3).
• Manage time without guidance (A3).
• Undertake on-line group tasks and reflect upon issues in emergency and disaster management (C2).
• Apply and evaluate strategies relating to issues of social and cultural diversity in the emergency management context (O2). Assignment Assessment will include two (2) three thousand (3000) word assignments with each worth 50% of the total mark (P3, I3, O2, W3, A3, C2, D2). 100%

Assessment: To successfully complete this subject an aggregate mark of 50% must be achieved.
Assessment will reflect the following Core Graduate Attributes. Students will:
- Identify and solve complex problems related to emergency management (P3).
- Locate, evaluate, manage and use information gained from a variety of sources and relate this information to emergency and disaster management (I3).
- Communicate with peers via on-line medium in formal and informal settings (O2).
- Synthesise complex material in the area of emergency and disaster management and communicate ideas at a professional level (W3).
- Manage time without guidance (A3).
- Undertake on-line group tasks and reflect upon issues in emergency and disaster management (C2).
- Apply and evaluate strategies relating to issues of social and cultural diversity in the emergency management context (D2). Assignment Assessment will include two (2) three thousand (3000) word assignments with each worth 50% of the total mark (P3, I3, O2, W3, A3, C2, D2). 100%

HHP5208 DISASTER RESEARCH

Locations: On-line,
Pre-requisites: Appropriate Undergraduate qualification or equivalent
Descriptions: This subject will contain:
- The introduction to research in Emergency Management
- Critical analysis of current research in Emergency Management
- Components of the research process
- Preparing a literature review
- Problem identification in Emergency Management
- Hypothesis development
- Research design
- Data collection
- Data analysis
- Research proposal preparation
- The role of the Emergency Manager in relation to research

Credit Points: 12

Learning Outcomes: Upon successful completion of this subject the student will:
- Discuss the role of Emergency Management personnel in relation to research
- Discuss ethical considerations in an Emergency Management research context

Class Contact: Three (3) hours of on-line lecture and 1 hour of on-line tutorial. Further contact with students will be via on-line chat rooms/discussions and via e-mail and telephone.


Assessment: To successfully complete this subject an aggregate mark of 50% must be achieved. Assessment will reflect the following Core Graduate Attributes. Students will:
- Identify and solve complex problems related to emergency management (P3).
- Locate, evaluate, manage and use information gained from a variety of sources and relate this information to emergency and disaster management (I3).
- Communicate with peers via on-line medium in formal and informal settings (O2).
- Synthesise complex material in the area of emergency and disaster management and communicate ideas at a professional level (W3).
- Manage time without guidance (A3).
- Undertake on-line group tasks and reflect upon issues in emergency and disaster management (C2).
- Apply and evaluate strategies relating to issues of social and cultural diversity in the emergency management context (D2). Assignment Assessment will include two (2) three thousand (3000) word assignments in the form of a literature review and research proposal with each worth 50% of 100%

HHR3124 ACUPUNCTURE AND MOXIBUSTION: MICROSYSTEMS

Locations: To be advised., VU/Gold Coast Institute of TAFE (GCIT)
Pre-requisites: As arranged and negotiated by GCIT and VU.
Descriptions:
- Ear acupuncture,
- Head (scalp) acupuncture practice,
- Hand, foot, face, nose and eye acupuncture micro-system practice;
- Ankylo-capsular acupuncture and skin sections practice;
- The use of electronic devices including electro-acupuncture and other technologies in micro-system point location, diagnosis and therapy;
- Application of combined micro-system and standard acupuncture point treatment principles and protocols.

Credit Points: 8

Learning Outcomes: At the satisfactory completion of this subject, students will be able to:
- determine the principles underpinning the application of a micro-system treatment;
- determine when it is appropriate to apply a micro-system approach; justify micro-system point selection;
• identify functions and precautions relevant to points used in micro-system acupuncture;
• apply micro-system treatments including justify micro-system point selection in the clinical situation;
• correctly locate and state the common functions of points used in micro-system acupuncture;
• explain the relationship between micro-systems and other methods of Chinese medical diagnosis such as bian zheng lun zhi.
• demonstrate consolidation and establishment of attributes in effective problem solving and clinical reasoning; information management and processing; communication skills; independent and collaborative empowerment; and appropriate social and cultural awareness and responsiveness.

Class Contact: The equivalent of 4 hours a week for one semester, comprising of seminars and clinical workshops/practice.


Assessment: One practical and oral assessment weighted at 50% each.

HHR3234 ACUPUNCTURE AND MOXIBUSTION: THERAPEUTIC APPLICATIONS

Locations: To be advised., GCIT
Pre-requisites: As arranged and negotiated by GCIT and VUT.

Descriptions: This subject focuses on a fundamental Traditional Chinese medical idea: the relationship between theory and practice. The unit emphasises the importance of consolidating the task of making a tentative diagnosis, proposing appropriate treatment strategies and management while recognising the role of the practitioner as an agent of change. By simulating clinical experiences the student is offered the opportunity to refine their clinical skills in relationship to their internship training. Specific emphasis is given to critical analysis of case studies, point selection, discrimination and acupuncture point combinations, pulse taking and its clinical significance, consolidating physical therapies such as tui na and applying other therapeutic approaches such as auricular, scalp acupuncture etc.

Credit Points: 8

Learning Outcomes: By the end of this unit the student it is expected that the student will be better able to propose and defend a tentative diagnosis, critically assess the means by which the diagnosis is arrived at, propose a management strategy including practitioner advice/counsel and client self help tasks, suggest a point combination and subsequent combinations given the practitioner’s understanding of the client’s pattern, explain in plain English the client’s condition and the proposed treatment strategy, select an appropriate patent herbal remedy according a client’s presenting pattern.

Class Contact: The equivalent of 48 hrs for one semester.


Assessment: Two assignments weighted at 50% each. Length 1500-2000 words each.

HHR3254 ACUPUNCTURE AND MOXIBUSTION: CLINICAL MEDICINE 2

Locations: To be advised., VU/Gold Coast Institute of TAFE (GCIT)
Pre-requisites: As arranged and negotiated by GCIT and VUT.

Descriptions: A Chinese medical perspective of; gynaecological and fertility conditions, obstetrics, pediatrics, substance abuse, skin conditions, HIV/AIDS and cosmetic acupuncture.

Credit Points: 8

Learning Outcomes: It is expected that by the end of the unit the student will be able to: analyse and interpret a range of TCM patterns of disharmony, recognise the connection to biomedical patterns and TCM patterns of disharmony, propose and discuss treatment and management approaches specific to a client and their social milieu, identify and investigate areas of TCM where there is a gap in one’s knowledge base.

Class Contact: The equivalent of 4 hours a week for one semester.


Assessment: One take home assignment due at the end of semester and one exam 50% each.

HHS3171 PSYCHOLOGY & SOCIAL SCIENCES 1

Locations: City Flinders,
Pre-requisites: Nil.

Descriptions: Introduction to psychological and sociological aspects of healthcare practice. Human diversity from theoretical and practical perspectives. Models used to describe and discuss disability and cultural diversity. Relevance of gender, age, ethnicity and socio-economics status in healthcare practice. The needs of patients in the community. The needs of carers and individuals with a terminal illness, and the potential role of the Osteopath. The clinical interview.

Credit Points: 6

Learning Outcomes: On successful completion of this unit, students are expected to be able to:
• Discuss psychological and sociological issues relevant to healthcare practice;
• Explain the psychological and social needs of patients from different communities;
• Describe models and provide definitions commonly used in discussions on disability and cultural diversity;
• Discuss the relevance of gender, ethnicity and socio-economics in healthcare practice;
• Predict the needs of individuals with a terminal illness;
• Discuss the needs of carers;
• Explain the potential role of the osteopath for clients with diverse backgrounds, and especially those with a terminal illness.

Class Contact: One (1) hour per week or equivalent for one semester comprising lectures

Assessment: Other Clinical Interview Analysis 50%
Class Contact: Six hours per week or equivalent for one semester comprising lectures, tutorials and self-managed learning activities.


Assessment: One combined practical and oral exam (30%) (hurdle requirement); one assignment (1200 words) (40%); one 2-hour theory examination (30%). This unit is a hurdle requirement. The VU generic Core Graduate Attributes assessed in this unit are: P2,12,02,Z2,A2,C2,D2.

Credit Points: 12

Learning Outcomes: On successful completion of this unit (in addition to learning outcomes stipulated in the previous clinical unit HHT1009 Introduction to Chinese Medicine Clinical Practice) it is expected that students will be able to:

- Participate in the day-to-day management and running of a Chinese medicine clinic by working as an assistant and as a member of the clinic team;
- Perform routine client-based clinical and receptionist skills (handling telephone enquiries, appointments, greeting, seating, directing clients, maintaining privacy of clients, client file management, payment management);
- Assist in the clinic room (including demonstrating procedures involved in management of a treatment room, preparation of acupuncture equipment for rooms, changing of linen, cleaning, removal of used equipment; compliance with principles and procedures of personal hygiene; procedures involved with preparing patients for treatment including maintaining client modesty);
- Develop their Chinese medical diagnostic skills from the perspective of Si zhen therapy;
- Display limited herb dispensing skills and knowledge and work as part of a dispensary team (including being able to read and interpret a prescription, demonstrate methods of herb preparation, dispense a prescription)
- Demonstrate the correct storage and handling of herbs.

Class Contact:

A minimum of seventy-two (72) hours in an approved clinical setting normally spread across one entire semester (hurdle requirement).

Required Reading: To be advised.

Assessment: Supervised placement comprising successful completion of required 72 clinical hours (pass/fail) (hurdle requirement) and overall satisfactory report(s) from clinical placement(s) (pass/fail) (hurdle requirement); combined practical and oral examination (proficiency standard hurdle requirement). Any failed assessment item will need to be discussed in the first instance with the Clinical Co-ordinator. This unit is a hurdle requirement. Other As above Pass/Fail Additional Statements Clinical sessions have a hurdle requirement of at least 100% attendance.

HHT1147 MINOR THESIS - PART-TIME

Locations: St Albans,

Pre-requisites: Nil

Descriptions: The minor thesis provides students with an opportunity to extend their knowledge and ability to critically analyse issues specific to primary health care and to engage in independent inquiry in an area of professional interest. The thesis will be a research paper and will provide evidence of independent research which demonstrates the ability to define a problem, undertake a detailed literature review, develop a research design appropriate to the topic and collect and analyse, interpret and present data. The thesis should demonstrate a high standard of written communication skills. A supervisor will be appointed to support and oversee the student’s research according to guidelines established by the Department of Health Sciences. Required Reading To be advised by supervisor.

Credit Points: 8

Learning Outcomes: To be advised.

Class Contact: HHT1127 Minor Thesis (full-time), nine hours per week in semester one; HHT1137 Minor Thesis (full-time), twelve hours per week in semester two; HHT1147 Minor Thesis (part-time), three hours per week in semester one; HHT1157 Minor Thesis (part-time), six hours per week in semesters two, three and four.

Required Reading: To be advised.

Assessment: One 15,000-20,000 word paper.

Credit Points: 12

Learning Outcomes: On successful completion of this unit (in addition to learning outcomes stipulated in the previous clinical unit HHT1009 Introduction to Chinese Medicine Clinical Practice) it is expected that students will be able to:

- Place in context the history and development of Chinese medicine formulae;
- Use the hierarchy of ingredients theory to combine herbs into formulae (be able to explain the principles for combining substances in formulae, analyse the composition and explain the principal actions of major formulae in particular formula categories and explain the relationship between formula categories and treatment strategies);
- Use composition and change theories;
- Explain the eight (8) treatment methods (and relate these to the formula categories of expel dampness, treat phlegm, regulate qi, tonify qi, tonify yin,
tonify yang, tonify blood, invigorate blood, stop bleeding, stabilise and bind, calm shen and others);

• Discuss types and usages of formulae in the following categories: expel dampness, treat phlegm, regulate qi, tonify qi, tonify yin, tonify yang, tonify blood, invigorate blood, stop bleeding, stabilise and bind, calm shen and others (be able to compare and contrast the compositions, actions and indications of principle formulae that belong to the same formulae category, distinguish the most appropriate formulae to achieve a particular therapeutic effect, and describe the differences between classical design/formulations and commercial productions of medicines);

• Discuss the relationships amongst traditional pharmacopoeia and formula construction;

• Discuss the compositions, functions, indications, contra-indications, applications, methods of preparation and administration and dosages of the traditional and some advanced formulary with a focus on the following formulae categories: expel dampness, treat phlegm, regulate qi, tonify qi, tonify yin, tonify yang, tonify blood, invigorate blood, stop bleeding, stabilise and bind, calm shen and others (including how to advise patients on preparation, administration, cautions/contraindications and actions to take in event of unexpected adverse reaction);

• Suggest modifications to formulate according to clinical presentations (including those necessary due to restrictions on access to and use of potentially toxic herbs and/or endangered species under Australian regulations);

• Demonstrate consolidation and establishment of attributes in effective problem solving and clinical reasoning; information management and processing; communication skills; independent and collaborative empowerment; and appropriate social and cultural awareness and responsiveness.

Class Contact: Six hours per week or equivalent for one comprising lectures and tutorials semester. Students should reasonably expect to devote additional private contact hours of at least three times more than the stipulated class contact hours.


Assessment: One essay (1000 words) (30%); one written examination (60%).

HHT2203 CHINESE MEDICINE CLINICAL PRACTICE 2

Locations: City Flinders, St Albans,

Pre-requisites: HHT2003 Chinese Medical Diagnosis and Pathogenesis 2; HHT2011 Chinese Medicine Clinical Practice 1; or equivalents.

Descriptions: Topics include: preparation of necessary acupuncture equipment for each clinic room; maintenance of client records; general procedures involved in managing files including: retrieving and storing of client files, updating files, and preserving the confidentiality of client files; arriving at diagnosis and treatment principle; practitioner diagnosis and treatment details; general client care and comfort; pulse taking; arranging appointments; review of procedures in dispensing herbs (herbal identification, use of scales, accurate dispensing, safe dispensing); an introduction to the more complex methods of processing of herbs. Pao Zhi, Shi liao, moxibustion and acupuncture skills; the role of the assistant in the clinical setting; privacy and confidentiality issues.

Credit Points: 16

Learning Outcomes: On successful completion of this unit, in addition to learning outcomes stipulated in previous clinical units (HHT1009 Introduction to Chinese Medicine Clinical Practice and HHT2011 Chinese Medicine Clinical Practice 1), students will be able to:

• Participate in the day-to-day management and running of a Chinese medicine clinic by working as an assistant and as a member of the clinic team;

• Perform routine client-based clinical and receptionist skills (including explaining general procedures involved in recording of patient details in client files and maintaining client records) and assist in the clinic room (demonstrate the procedures involved in the management of a treatment room including the management of treatment equipment, hygiene handling of equipment and the proper preparation and storage of materials for acupuncture, moxibustion and cupping, changing of linen, cleaning of treatment surfaces prior to and after acupuncture treatment, cleaning of the treatment room and the removal of used equipment following a patient);

• Develop their Chinese medical diagnostic skills from the perspective of Si zhen (including refining abilities in tongue and pulse diagnosis);

• Display developing herb dispensing skills and knowledge such as correct storage and handling of herbs and work as part of a dispensary team (including demonstrating the processing of herbs, packaging of a herbal prescription, and observing hygiene procedures when preparing herbs);

• Commence practicing moxibustion and other Chinese medicine therapeutic skills in the Clinic including demonstrating the hygienic handling, removal and disposal of needles and other waste following acupuncture treatment;

• Use the checklist of criteria as a guide for on-going learning in the clinical setting;
• Contribute to case history discussions and be able to respond at a basic level to patient enquiries about Chinese medicine (including herbal medicine and acupuncture);
• Exhibit developing interpersonal skills with supervisors, fellow students and clients;
• Demonstrate consolidation and establishment of attributes in effective problem solving and clinical reasoning; information management and processing; communication skills; independent and collaborative empowerment; and appropriate social and cultural awareness and responsiveness.

Class Contact: A minimum of seventy-two (72) hours in an approved clinical setting normally spread across one entire semester (hurdle requirement).


Assessment: Supervised placement comprising successful completion of required 72 clinical hours (pass/fail) (hurdle requirement) and overall satisfactory report(s) from clinical placement(s) (pass/fail) (hurdle requirement); combined practical and oral examination (proficiency standard hurdle requirement). Any failed assessment item will need to be discussed in the first instance with the Clinical Co-ordinator. This unit is a hurdle requirement.

Additional Statement
Clinical sessions have a hurdle requirement of at least 100% attendance. Other As above Pass/Fail

HHT3003 COUNSELLING SKILLS FOR CHINESE MEDICAL PRACTICE

Locations: St Albans,
Pre-requisites: HHT2205 Acupuncture Needling: Theory and Practice 2; or equivalents.

Descriptions: This unit explores and reflects upon the evolution of current popular counselling techniques. The unit allows the student to experience how they may adapt counselling techniques to the CM framework of clinical practice. This unit explores many facets of the client/practitioner relationship, ethical issues, professionalism and confidentiality. In preparation for the student’s future role as a primary health care CM practitioner, the unit will also cover such topics as death and dying; trauma; sexual, emotional and physical abuse; the elderly; and cross-cultural counselling.

Credit Points: 6

Learning Outcomes: On successful completion of this unit, it is expected that students will be able to:
• Discuss the principles underlying the application of micro-system treatment including ear acupuncture and scalp acupuncture;
• Explain the history and theoretical basis of the ear and scalp acupuncture micro-systems;
• Explain the rationale for selection of a micro-system approach;
• Justify micro-system point selection in the clinical situation;
• Devise a clinical protocol and management plan utilizing a micro-system in conjunction with other aspects of acupuncture theory (e.g., differential diagnosis);
• Identify functions and precautions (cautions and contraindications) relevant to points used in micro-system acupuncture;
• Correctly locate points relevant to micro-system acupuncture in general and to ear and scalp acupuncture in particular when performing specific needling procedures;
• Discuss the theory and practice of electro-acupuncture, laser acupuncture, TENS and other therapeutic technologies;
• Use electronic devices for point location and diagnosis in micro-systems;
• Explain the importance of infection control in needling procedures (including management of accidents resulting from needling);
• Demonstrate consolidation and establishment of attributes in effective problem solving and clinical reasoning; information management and processing; communication skills; independent and collaborative empowerment; and appropriate social and cultural awareness and responsiveness.

Class Contact: To be advised.

Assessment: One combined practical and oral exam (50%) (proficiency standard hurdle requirement); one written examination (50%). All assessment items address the CGA levels as indicated in the Learning Outcomes.

HHT3103 CHINESE MEDICINE CLINICAL PRACTICE 3

Locations: City Flinders, St Albans,

Pre-requisites: Satisfactory completion of year 2 of the HBAH degree; or equivalent.

Descriptions: Topics include: assisting the practitioner during treatment; applying moxibustion, needle manipulation as required; assisting with cupping, moxibustion, Shi liao and herbs; engaging in discussion about developing a tentative diagnosis and treatment principle; carrying out therapeutic procedures as requested by the CM practitioner; review of standard operating procedures in dispersing herbs (herbal identification, use of scales, accurate, safe dispensing, ordering herbs, accounting procedures). Introduction to more complex methods of processing of herbs in preparation for continuation of the clinical program. Methods of Pao Zhi, moxibustion and acupuncture skills. The notion of pathogenesis and relationship to herbal prescriptions. Materia Medica substitutions, advanced herbal recognition.

Credit Points: 16

Learning Outcomes: On successful completion of this unit, students will be able to:

- Demonstrate skills consistent with working successfully as an assistant practitioner and as part of a team within a Chinese medicine clinic;
- Mentor junior students in the clinic;
- Further develop their Chinese medical diagnostic skills from the perspective of Si Zhen;
- Practice moxibustion, cupping, gua sha, shi liao and acupuncture in the clinical setting (including appropriate management of materials and equipment);
- Consolidate their ability to select acupuncture points, practice safe needle insertion and manipulation (and explain how this can achieve specific therapeutic outcomes);
- Work closely with final year students and supervisors discussing client management: diagnosis (including physical examinations as appropriate), treatment protocols, acupuncture point prescriptions and the suitability of herbal prescriptions, case history documentation (client records);
- Correctly identify raw herbs, scrutinize a herbal prescription (for errors, omissions, correct dosage) and fill a herbal prescription (preparation, dispensing);
- Explain treatment protocols and different preparation methods and uses of herbs to clients (including actions to be taken after finishing the prescription);
- Use the checklist of criteria on placement expectations for ongoing learning in the clinical setting;
- Explain the management and daily operation of the Chinese medicine clinic;
- Exhibit developing interpersonal skills with supervisors, fellow students and clients;
- Demonstrate consolidation and establishment of attributes in effective problem solving and clinical reasoning; information management and processing; communication skills; independent and collaborative empowerment; and appropriate social and cultural awareness and responsiveness.

Class Contact: A minimum of seventy-two (72) hours in an approved clinical setting normally spread across one entire semester (hurdle requirement).


Assessment: Supervised placement comprising successful completion of required 72 clinical hours (pass/fail) (hurdle requirement) and overall satisfactory report(s) from clinical placement(s) (pass/fail) (hurdle requirement); combined practical and oral examination (proficiency standard hurdle requirement). Any failed assessment item will need to be discussed in the first instance with the Clinical Coordinator. This unit is a hurdle requirement. Additional statements: Clinical sessions have a hurdle requirement of at least 100% attendance.

HHT3104 MAJOR CLASSICS - SHANG HAN LUN & WENG BING 1

Locations: St Albans,

Pre-requisites: HHT2003 Chinese Medical Diagnosis and Pathogenesis 2; HHT2200 Formulae and Strategies 2; or equivalent.

Descriptions: Shang Han Lun and Wen Bing as part of history of ideas in Chinese medicine. Underlying theories associated with these two texts. Comparison of the Shang Han and Wen Bing treatment strategies. Onset and transmission of disease according to Shang Han and Wen Bing. The concept of Pattern Identifications by the Six Channels. The application of the Eight Guiding Principles. The concept of externally contracted diseases caused by pathogenic cold and wind. Onset and transmission of wen bing diseases. Correlation of the Four Aspects with the Triple Jiao, and Six Channels, diagnosis of Wen Bing (fever, tongue, Ban, Zhen, Mililina Alba), Fu xie (latent disease), Wen Bing treatment strategies. Character writing of terminology.

Credit Points: 8

Learning Outcomes: On successful completion of this unit, it is expected that students will be able to:

- Place in context the history and development of medical ideas encountered in the shang han and wen bing (and the Jing Gui Yao Lue, and reflect on the role of Six Meridian Theory and Theory of Wei, Qi, Ying and Xue historically and in modern practice and evidence-based research);
- Apply methods of pattern identification from a shang han and wen bing perspective;
- Discuss the specific diagnostic techniques used in wen bing;
- Explain the relationship between liu jing biao zheng and wei qi ying xue bian zheng (including describing the key concepts of the Six Meridan Theory and Theory of Wei, Qi, Ying and Xue historically and in modern practice and evidence-based research);
- Discuss and apply principles of treatment and appropriate formulae according to Shang Han and Wen Bing (for each of the syndromes, describe the signs-symptoms complexes, key formulae and their component herbs, common modifications, any special preparation, indications, cautions and contraindications and comparisons with other formulae);
- Demonstrate consolidation and establishment of attributes in effective problem solving and clinical reasoning; information management and processing; communication skills; independent and collaborative empowerment; and appropriate social and cultural awareness and responsiveness.

Class Contact: Five hours per week or equivalent for one semester comprising lectures and tutorials. Students should reasonably expect to devote additional private contact hours of at least three times more than the stipulated class contact hours.


Assessment: One assignment (1500-2000 words); one examination (70%). This unit is a hurdle requirement.
HHT3105 MAJOR CLASSICS-SHANG HAN LUN WENG BING 2

Locations: St Albans,

Pre-requisites: HHT3104 Major Classics - Shang Han & Wen Bing 1; or equivalent.

Descriptions: Further development of Shang Han Lun and Wen Bing as part of the history of ideas in Chinese medicine. Complex theories associated with these two texts. Onset, transmission and transmutation of disease. Complex presentations according to Shang Han and Wen Bing. Alternative uses of shang han and wen bing formulae.

Credit Points: 6

Learning Outcomes: On successful completion of this unit, it is expected that students will be able to:

- Apply methods of pattern identification from a shang han and wen bing perspective (including describing the sign-symptom patterns and transmuted patterns associated with the six meridians and sign-symptom patterns associated with the four aspects);
- Describe the relationship between liu jing biai zhe and wei qi ying xue biai zhe;
- Discuss and apply principles of treatment and appropriate formulae (and modifications) according to Shang Han and Wen Bing (in the treatment of a range of disorders including modern diseases);
- Evaluate the latent pathogen theory and its modern application to treating auto-immune diseases;
- Differentiate amongst pulse states according to symptom complexes;
- Justify the shang han and wen bing treatment strategies and formulae (including in the context of modern clinical practice and evidence-based research);
- Demonstrate consolidation and establishment of attributes in effective problem solving and clinical reasoning; information management and processing; communication skills; independent and collaborative empowerment; and appropriate social and cultural awareness and responsiveness.

Class Contact: Five hours per week or equivalent for one semester comprising lectures and workshops. Students should reasonably expect to devote additional private contact hours of at least three times more than the stipulated class contact hours.


Assessment: One written assignment (1500 - 2000 words) (30%); one written examination (70%).

HHT3106 INTERNAL MEDICINE 1

Locations: St Albans,

Pre-requisites: HHT2003 Chinese Medical Diagnosis and Pathogenesis 2; HHT2200 Formulae and Strategies 2; HHT2205 Acupuncture Needling: Theory and Practice 2; or equivalents.

Descriptions: This unit examines in detail traditional Chinese internal medicine (Nei Ke) based on the fifty-two disorders as specified in the classic the Jin Gui Yao Lue and additional disorders of clinical significance. The diagnosis of these disorders and their differentiation into patterns (Zheng) according to the system of bian zheng lun zhi receives detailed attention. The origin of each disorder and the pathomechanisms by which its symptoms manifest and develop are discussed. The design of treatment interventions using herbal prescriptions, acupuncture, manipulation and dietary therapy (shi liao) according to the differentiation of the disorder is examined. This unit will focus on internal medicine disorders as they relate to the following systems: respiratory, cardiovascular, endocrine and musculoskeletal. This unit will also include shen disturbances and modern diseases’ amenable to Chinese medicine treatment.

Credit Points: 6

Learning Outcomes: On successful completion of this unit, it is expected that students will be able to:

- Classify disorders according to the CM framework;
- Apply bian zheng lun zhi approaches to the differentiation of disharmonies;
- Devise treatment strategies that address the patterns of disharmony present in Nei Ke disorders;
- Formulate interventions using herbal formulae or acupuncture prescriptions;
- Formulate Chinese Medicine dietary therapy according to the differentiation of disorders;
- Propose lifestyle modifications according to CM principles;
- Determine the appropriateness of differing interventions (prescription of herbal preparations, acupuncture-moxibustion treatment, use of shi liao) according to the presentation (including any cautions and contraindications for treatment and potential drug-herb interactions) and when referral to western medical practitioners is necessary;
- Explain the relationships between the pathomechanics of disorders and the components of the treatment intervention (using herbal prescription or acupuncture);
- Demonstrate consolidation and establishment of attributes in effective problem solving and clinical reasoning; information management and processing; communication skills; independent and collaborative empowerment; and appropriate social and cultural awareness and responsiveness.

Class Contact: Six hours per week or equivalent for one semester comprising lectures and tutorials. Students should reasonably expect to devote additional private contact hours of at least three times more than the stipulated class contact hours.


Assessment: One final written cases examination (50%); one final written theory examination (50%). This unit is a hurdle requirement.

HHT3108 CHINESE MEDICINE THERAPEUTIC APPLICATIONS 1

Locations: St Albans,

Pre-requisites: HHT2200 Formulae and Strategies 2; or equivalent.

Descriptions: The focus of this unit is to prepare students for their internship year. Attention is given to diagnosis, treatment and management strategies (acupuncture and herbs), an in-depth exploration of contemporary treatment techniques and approaches, and the notion of yi (intent) as it applies to Chinese medicine. Critical analysis of case studies, approaches to acupuncture selection, discrimination between points and herbal prescription.Workshops have a hurdle requirement of at least 80% attendance.

Credit Points: 6

Learning Outcomes: On successful completion of this unit, it is expected that students will be able to:
• Critically assess and reflect on the means by which a diagnosis is reached;
• Demonstrate clinical skills in Chinese medicine diagnosis for Nei Ke conditions;
• Classify Nei Ke disorders according to broad Chinese medicine disease categories;
• Differentiate Nei Ke disorders according to Bian Zheng Lun Zhi;
• Propose management strategies including practitioner advice, counselling and client self help tasks (including health preservation and enhancement advice, referral to other health practitioners);
• Select and prescribe appropriate acupuncture point combinations (and moxibustion treatment), herbal formulae or both given the practitioners and students understanding(s) of the clients condition(s) (and identify any cautions and contraindications for treatment and necessary actions in the event of an adverse reaction);
• Apply specific clinical techniques to a range of particular conditions (including acupuncture, moxibustion);
• Explain in professional terms and in plain English, proposed treatment strategies with respect to the clients condition(s);
• Explain the relationship between pulse-taking during the needling process, particularly in relation to the notion of moving Qi by needling;
• Demonstrate consolidation and establishment of attributes in effective problem solving and clinical reasoning; information management and processing; communication skills; independent and collaborative empowerment; and appropriate social and cultural awareness and responsiveness.

Class Contact: Five hours per week or equivalent for one semester comprising seminars and workshops. Students should reasonably expect to devote additional private contact hours of at least three times more than the stipulated class contact hours.


Assessment: Class participation (80% attendance requirement and appropriate participation as outlined in the unit outline) (hurdle requirement). To obtain at least a Pass in the unit, normally all components of assessment must be attempted and passed. Failed assessment items (assignment and practical examination) may be resubmitted or re-attempted once only. Maximum possible marks to be obtained on any resubmission or re-attempt will be 50%. Proficiency standard must be obtained on any re-attempted practical examination. This unit is a hurdle requirement.

Additional Statement Workshops have a hurdle requirement of at least 80% attendance. Assignment One assignment (1500 words). 40%
Learning Outcomes: On successful completion of this unit, it is expected that students will be able to:

- Assume an increasing range of responsibilities in the management of clients in clinical settings;
- Perform safely, competently and efficiently as assistants and as members of a team in Chinese medicine clinics;
- Assist junior students to correctly identify raw herbs, correctly fill and scrutinise valid herbal prescriptions;
- Mentor junior students in clinics;
- Work closely with the final year Chinese medicine students and supervisors discussing cases, diagnoses (including physical examinations as appropriate), treatment protocols and acupoint choices, needling strategies and herbal formulae prescriptions; case history documentation;
- Explain and justify the formulation of a diagnosis and treatment plan including an acupuncture and/or herbal prescription and explain how this achieves therapeutic aims;
- Consolidate their ability to practice moxibustion, shi liao, and acupuncture, ear acupuncture, laser acupuncture and electro-acupuncture in the clinical setting (including selection and justification of acupoints and needling techniques, appropriate management of materials and equipment);
- Explain treatment protocols and different preparation methods and uses of herbs to clients (including actions to be taken after finishing the prescription and in the event of an unexpected adverse reaction);
- Use the checklist of criteria as a guide for ongoing learning in the clinical setting;
- Explain the management and daily operation of the Chinese medicine clinic;
- Exhibit developing interpersonal skills with supervisors and colleagues;
- Demonstrate consolidation and establishment of attributes in effective problem solving and clinical reasoning; information management and processing; communication skills; independent and collaborative empowerment; and appropriate social and cultural awareness and responsiveness.

Class Contact: A minimum of one hundred and eight (108) hours in an approved clinical setting normally spread across one entire semester (hurdle requirement).


Assessment: Supervised placement comprising successful completion of required 108 clinical hours (pass/fail) (hurdle requirement) and overall satisfactory report(s) from clinical placement(s) (pass/fail) (hurdle requirement); combined practical and oral examination (proficiency standard hurdle requirement). Any failed assessment item will need to be discussed in the first instance with the Clinical Co-ordinator. This unit is a hurdle requirement.

Additional Statement: Clinical sessions have a hurdle requirement of at least 100% attendance. Other As above Pass/Fail
HHT4002 RESEARCH METHODS FOR CHINESE MEDICINE

Locations: St Albans,

Pre-requisites: Nil.

Descriptions: Introduction to CM research design and methodology; paradigms of research; ways of obtaining CM knowledge; quantitative and qualitative research methods; research ethics; the application of the scientific method to CM research; non-experimental research designs; the evaluation of research; the computer as a research tool; scientific writing and the communication of research.

Credit Points: 6

Learning Outcomes: On successful completion of this unit, it is expected that students will be able to:

- Justify research in the field of Chinese medicine;
- Identify research question in the field of Chinese medicine;
- Describe various methods of research in quantitative and qualitative research;
- Critique and evaluate research studies and articles, including those in Chinese medicine;
- Identify ethical issues associated with conducting research, including CM research;
- Discuss the requirements, limitations and applications of research in Chinese medicine clinical practice;
- Discuss issues in the research process as they relate to evaluation of health care practice, programs and policy development;
- Explain the roles of databases in research;
- Explain, in professional and lay terms, research studies from the Chinese medicine literature;
- Demonstrate development and consolidation of attributes in effective problem solving and clinical reasoning; information management and processing; communication skills; independent and collaborative empowerment; and appropriate social and cultural awareness and responsiveness.

Class Contact: The equivalent of 36 hours per week for one semester comprising lectures and tutorials.


Assessment: Two research assignments (1500 words each) (50% each). This unit is a hurdle requirement for graduation.

HHT4004 PROFESSIONAL ISSUES FOR CHINESE MEDICAL PRACTICE

Locations: St Albans,

Pre-requisites: Nil.

Descriptions: Business management and planning. Market research, planning, advertising and promotion of a practice. Practice management: employer responsibilities, record keeping, taxation, workers compensation, legal and civil requirements. Department of Health regulations: local council regulations, licensing of premises, public risk, practitioner responsibilities; registration with the Chinese Medicine Registration Board of Victoria. Bioethical requirements of the profession as they relate to research and to professional practice. Community health: child support services, rehabilitation services, fertility clinics. Chinese medicine organizations: professional associations and accreditation, health funds and indemnity insurance, peer group associations both Australian and international; the current status of Chinese medicine in Australia and overseas; Chinese medicine and health education and promotion within the community. Exposure to alternative perspectives on health care, eg. osteopathy, chiropractic, physiotherapy, Alexander technique, naturopathy, European medical herbalism and homeopathy; psychology; working in various clinical settings.

Credit Points: 6

Learning Outcomes: On successful completion of this unit, it is expected that students will be able to:

- Demonstrate consolidation and establishment of attributes in effective problem solving and clinical reasoning; information management and processing; communication skills; independent and collaborative empowerment; and appropriate social and cultural awareness and responsiveness.
- Examine professional issues that impact on CM practice and the CM profession to the general public, peers and health practitioners (including the roles of continuing education and professional development in maintaining a practice);
- Incorporate the practical aspects of practice management into their own working situations, including how to research a clinic location, calculate the costs involved with setting up a new business, describe the government regulations, permits and guidelines for establishing a small business, establish clinic design, layout, clinical management and staffing policies;
- Develop a vision of their own future practice;
- Evaluate the facilities, services and other modalities, including sources of finance, available to practitioners establishing a practice;
- Describe and identify the professional, legal and ethical requirements associated with a Chinese medicine practice (including the government regulations for skin penetration, infection control, drugs and poisons legislation, and the regulatory requirements that impact on herbal medicine practice and dispensing);
- Prepare short-term and mid-to-long term business plans for their own anticipated practices;
- Provide solutions, including a range of marketing strategies, for typical and atypical dilemmas associated with establishing and maintaining a practice;
- Discuss the features of selected alternative health care modalities and multidisciplinary clinics;
- Demonstrate consolidation and establishment of attributes in effective problem solving and clinical reasoning; information management and processing; communication skills; independent and collaborative empowerment; and appropriate social and cultural awareness and responsiveness.

Class Contact: The equivalent of 48 hours per semester compromising lectures, tutorials and student directed learning.


Assessment: Subject participation (80% attendance requirement and appropriate participation) (hurdle requirement).

Additional Statements: Students should reasonably expect to devote additional private contact hours of at least 3 times more than the stipulated class contact hours. Practical sessions and workshops have a hurdle requirement of at least 80% attendance. This unit may be delivered in its entirety in burst mode to allow students the opportunity to undertake their VU-approved final clinical internship. Presentation Class presentation 30%

HHT4005 CHINESE MEDICINE ACUTE INTERVENTIONS

Locations: St Albans,

Pre-requisites: HHT3202 Chinese Medical Specialties; or equivalents.

Descriptions: Basic first aid; the diagnosis, treatment, monitoring and management of acute onset of illness; the diagnosis, treatment, monitoring and management of clinical emergencies.

Credit Points: 6

Learning Outcomes: To be advised.

Class Contact: Forty (40) hours or equivalent for one semester comprising lectures, seminars and self-directed learning activities and attending a Level 2 First Aid
Certificate course (24 hours). This subject will be delivered in its entirety before the mid semester break to allow students the opportunity to undertake their final clinical internship in China.


**Assessment:** Satisfactory completion of Level 2 First Aid Certificate (pass/fail) (hurdle requirement); one theory examination (100%). To obtain at least a Pass in the subject, normally all components of assessment must be attempted and passed. Where the final examination is failed, a supplementary examination will be offered. The maximum possible mark on the supplementary examination will be 50%.

### HHT4100 CASE CONFERENCING AND CLINICAL ISSUES 1

**Locations:** St Albans, St Kilda

**Pre-requisites:** Satisfactory completion of year 3 of the HBAH degree; or equivalent.

**Descriptions:** This unit integrates Chinese medicine theory and practice via interrogation of student case presentations. Case presentations will be determined by the experiences of students when treating clients. The focus will be on commonly seen cases in the Chinese medicine clinical specialities. The unit reinforces aspects of aseptic procedures; history taking; principles of diagnosis; treatment protocols; herb and point functions; dosages; a range of treatment skills; legal issues; and interpersonal and professional communication skills.

**Credit Points:** 6

**Learning Outcomes:** On successful completion of this unit, it is expected that students will be able to:

- Apply advanced CM theory and clinical practice theory to cases typically presenting at clinic;
- Retrieve and evaluate scientific articles and other electronic material applicable to specific and common case presentations in a range of CM clinical specialities;
- Explain the rationale of diagnoses and treatment selections including point and herb functions in terms of Chinese medicine theory and pathophysiology;
- Discuss the protocol of the Bian Zheng Lun Zhi method of prescribing treatments;
- Design and present holistic treatment strategies and plans, incorporating the principles of health preservation, with particular emphasis to an Australian patient base;
- Communicate case material in a professional style sufficient to facilitate effective handover;
- Demonstrate consolidation and establishment of attributes in effective problem solving and clinical reasoning; information management and processing; communication skills; independent and collaborative empowerment; and appropriate social and cultural awareness and responsiveness.

**Class Contact:** The equivalent of 48 hours for one semester comprising seminars of workshops, and directed research and other learning activities.


**Assessment:** Class participation (80%); attendance requirement as well as participation as stipulated in the unit tutorial guidelines (pass/fail) (hurdle requirement); two case conference seminars comprising one clinical review and one report in the designated assessment week(s) (Satisfactory/Unsatisfactory). This unit is a hurdle requirement. All assessment items address the CGA levels as indicated in the Learning Outcomes.

Additional Statement: Workshops have a hurdle requirement of at least 80% attendance. Other As above. Pass/Fail

### HHT4101 CHINESE MEDICINE OBSTETRICS AND GYNAECOLOGY

**Locations:** St Albans, St Kilda

**Pre-requisites:** HHT3207 Internal Medicine 2; or equivalent.

**Descriptions:** This unit examines the Chinese medicine clinical speciality of gynaecology with particular reference to treating gynaecological disorders with Chinese herbal formulae and acupuncture. Emphasis is on selected Materia Medica. The specialised role of acupuncture in obstetrics, including labour, and the role of Chinese medicine in relation to fertility and IVF are also examined. Professional issues in the patient-CM practitioner relationship and ethical issues in gynaecology and obstetrics in the Australian context are raised throughout.

**Credit Points:** 6

**Learning Outcomes:** On successful completion of this unit, it is expected that students will be able to:

- Place in context the history and development of CM gynaecology and obstetrics;
- Discuss the concept of Yue Jing (period) according to Chinese medicine;
- Discuss the relationship between the Boo Gong (uterus) and the Jing-Lou; classify gynaecological disorders according to broad Chinese medicine disease categories;
- Differentiate gynaecological disorders according to the Bian Zheng Lun Zhi method of CM (including descriptions and discussions of the main symptoms and principal syndromes, and the aetiology and pathogenesis of female urogenital, gynaecological and obstetric disorders and the relationship between symptom pattern and disease mechanism);
- Evaluate gynaecological conditions for their suitability for treatment with Chinese medicine (including identifying any cautions and contraindications and potential disease complications which need to be considered in the treatment of the main gynaecological and obstetric disorders); and possible needs to refer to outside health professionals including western medical;
- Apply Chinese medical perspectives and treatment methods for conception, maintaining the health of the mother and foetus during pregnancy and apply various Chinese medical techniques (especially acupuncture) during labour;
- Evaluate the general treatment principles applied in CM gynaecology and obstetrics;
- Identify selected Materia Medica, including main formulae and modifications, relevant to Chinese medicine gynaecology and obstetrics;
- Predict potential drug-herb interactions and explain the actions necessary in the event of an adverse reaction;
- Evaluate roles for the treatment modalities, including herbal medicine, acupuncture and moxibustion, used in gynaecological conditions;
- Evaluate roles for hygiene and diet in the prevention and treatment of gynaecological conditions;
- Demonstrate consolidation and establishment of attributes in effective problem solving and clinical reasoning; information management and processing; communication skills; independent and collaborative empowerment; and appropriate social and cultural awareness and responsiveness.

**Class Contact:** 6 hours/week or equivalent for one semester comprising lectures and tutorials.


**Assessment:** One assignment (1500 words) (50%); one 3-hour examination (50%). This unit is a hurdle requirement for graduation.
On successful completion of this unit, it is expected that students will be able to:

- Demonstrate understanding of the necessary requirements of and proficiency in maintenance of a herbal dispensary (including understanding requirements for labelling and storage, inventory and contamination control).
- Record casenotes in a professional manner (legal, legible, accurate, orderly) that would satisfy professional guidelines and would withstand legal scrutiny.
- Assess the clients needs for ongoing treatment or referral, plan a treatment strategy accordingly and communicate the course of treatment and any dietary and lifestyle recommendations to the client in plain English.
- Liaise and work effectively with clinical educators.
- Demonstrate consolidation and establishment of attributes in effective problem solving and clinical reasoning; information management and processing; communication skills; Independent and collaborative empowerment; and appropriate social and cultural awareness and responsiveness.

Class Contact: A minimum of one hundred and fifty-six (156) hours in an approved clinical setting normally spread across one entire semester (hurdle requirement).


Assessment: Supervised placement comprising successful completion of required 156 clinical hours (pass/fail) (hurdle requirement). Any failed assessment item will need to be discussed in the first instance with the Clinical Co-ordinator. This unit is a hurdle requirement.

Additional Statement: Clinical sessions have a hurdle requirement of at least 100% attendance. Practicum Overall satisfactory report(s) from clinical placement(s) (hurdle requirement); 50%
• Incorporate musculo-skeletal and neurological systems into history-taking and physical examinations;
• Describe external and internal causes of injury and wounds, the reactions of the body to injury and the processes of healing;
• Describe the aetiology, pathogenesis, main symptomatology, diagnosis and differential diagnosis (CM syndromes) of common neurological disorders and musculoskeletal conditions, including soft tissue injuries, dislocations and fractures;
• Describe the ranges of movements for particular joints and muscle groups from a regional anatomy perspective;
• Perform traditional and contemporary musculo-skeletal assessment and muscle energy release techniques, e.g., AET, Onsen, Sotai;
• Relate various muscle energy release techniques to the jing luo system;
• Evaluate musculo-skeletal and neurological conditions for their suitability for treatment with CM and possible needs to refer to outside health professionals including western medical;
• Predict and identify potential cautions, contraindications and adverse reactions of particular CM therapies and discuss actions necessary in the event of an adverse event;
• Evaluate roles for acupuncture, point injection therapy, laser therapy, herbal preparations (external and internal), tuo na, cupping, moxibustion, gu sha exercise and nutritional therapies in the treatment of musculo-skeletal and neurological disorders;
• Devise Chinese medicine treatment protocols and management plans consistent with the diagnosed musculo-skeletal and neurological conditions and demonstrate skills in appropriate therapies (including manual reduction and rehabilitation exercises);
• Demonstrate consolidation and establishment of attributes in effective problem solving and clinical reasoning; information management and processing; communication skills; independent and collaborative empowerment; and appropriate social and cultural awareness and responsiveness.

Class Contact: The equivalent of 48 hours for one semester comprising lectures and workshops.


Assessment: Examination One combined practical and oral musculo-skeletal examination. 50% Additional Statement: Workshops have a hurdle requirement of at least 80% attendance.

HHT4200 CASE CONFERENCING AND CLINICAL ISSUES 2

Locations: St Albans,
Pre-requisites: HHT4103 Chinese Medicine Clinical Internship 1; or equivalent
Descriptions: This unit integrates Chinese medicine theory and practice via interrogation of student case presentations. Case presentations will be determined by the experiences of students when treating clients. The focus will be on commonly seen cases in the Chinese medicine clinical specialties. The unit reinforces aspects of aseptic procedures; history taking; principles of diagnosis; treatment protocols; herb and point functions; dosages; a range of treatment skills; legal issues; and interpersonal and professional communication skills.
Credit Points: 6
Learning Outcomes: On successful completion of this unit, it is expected that students will be able to demonstrate the following learning objectives at a more advanced level than in HHT4100 Case Conferencing and Clinical Issues 1:
• Apply advanced CM theory and clinical practice theory to cases typically presenting at clinic;
• Retrieve and evaluate scientific articles and other electronic material applicable to specific and common case presentations in a range of CM clinical specialties;
• Explain the rationale of diagnoses and treatment selections including point and herb functions in terms of Chinese medicine theory and pathophysiology;
• Discuss the protocol of the Bian Zheng Lun Zhi method of prescribing treatments;
• Design and present holistic treatment strategies and plans, incorporating the principles of health preservation, with particular emphasis to an Australian patient base;
• Communicate case material in a professional style sufficient to facilitate effective handover;
• Demonstrate advanced practical skills in acupuncture, moxibustion, cupping and ancillary treatment methods;
• Demonstrate consolidation and establishment of attributes in effective problem solving and clinical reasoning; information management and processing; communication skills; independent and collaborative empowerment; and appropriate social and cultural awareness and responsiveness.

Class Contact: The equivalent of 72 hours for one semester comprising seminars and workshops. This unit may be delivered in its entirety in burst mode to allow students the opportunity to undertake their VU-approved final clinical internship.


Assessment: Class participation (80% attendance requirement as well as participation as stipulated in the unit tutorial guidelines) (pass/fail) (hurdle requirement); two case conference seminars comprising one clinical review and one report in the designated assessment week(s) (Satisfactory/Unsatisfactory). This unit is a hurdle requirement for graduation. All assessment items address the CQA levels as indicated in the Learning Outcomes.

Additional Statement: Workshop sessions have a hurdle requirement of at least 80% attendance. Other As above Pass/Fail

HHT4201 CHINESE MEDICINE PEDIATRICS

Locations: St Albans,
Pre-requisites: HHT3207 Internal Medicine 2; or equivalent.
Descriptions: This unit presents the theory and practice of the CM clinical specialty of paediatrics. Topics include the anatomy and physiology of childhood development, including growth, pathology of various paediatric disorders and care needs associated with childhood development and disease. Particular emphasis is given to the use of Chinese herbs, acupuncture, moxibustion, tuo na, dietary management and nursing care for children with disorders. Specific case studies, selected Materia Medica and ethical issues in the child practitioner relationship are emphasized.
Credit Points: 6
Learning Outcomes: On successful completion of this unit, it is expected that students will be able to:

- Place in context the history and development of CM paediatrics;
- Discuss how child development (physical, social and emotional) impacts on paediatric care needs;
- Explain the pathology of various childhood disorders (including methods of diagnosis, symptomatology and etiology of main paediatric disorders);
- Differentiate paediatric disorders including principal symptoms and main syndromes according to Bian Zheng Lun Zhi method in CM;
- Evaluate paediatric conditions for their suitability for treatment with CM and possible needs to refer to outside health professionals including western medical;
- Apply and evaluate the general treatments principles in CM paediatrics (explain the relationship between disease mechanism(s) and treatment principle(s) and explain measures for prevention, amelioration and care of paediatric disorders);
- Identify selected Materia Medica and formulae including modifications relevant to CM paediatrics;
- Evaluate the roles for different treatment regimes including acupuncture, moxibustion, tuina in CM paediatrics and when referral to other health practitioners including western medicine is necessary;
- Explain cautions and contraindications associated with treatments used in children (including complications that could occur in a particular disease, possible adverse reactions to herbal formulae, drug-herb interactions, and cautions and potential adverse reactions associated with acupuncture and moxibustion);
- Demonstrate consolidation and establishment of attributes in effective problem solving and clinical reasoning; information management and processing; communication skills; independent and collaborative empowerment; and appropriate social and cultural awareness and responsiveness.

Class Contact: The equivalent of 60 hours per semester comprising lectures, tutorials and student directed learning.


Assessment: Assignment One assignment (1500-2000 words) 30% Additional Statement: Students should reasonably expect to devote additional private contact hours of at least 3 times more than the stipulated class contact hours. Practical sessions and workshops have a hurdle requirement of at least 80% attendance. This unit may be delivered in its entirety in burst mode to allow students the opportunity to undertake their VU-approved final clinical internship.

HHT4203 CHINESE MEDICINE DERMATOLOGY

Locations: St Albans,

Pre-requisites: HHT3207 Internal Medicine 2; or equivalent.

Descriptions: This unit covers the theory and practice of Chinese medicine dermatology. Material includes the traditional and modern classification systems of dermatological disorders; and the general features of physiology, pathology and diagnosis as applied to Chinese medicine dermatology. The anatomy, diagnosis, differentiation and treatment will be examined through detailed studies of common dermatological diseases whilst treatment modalities, including formulating prescriptions of Chinese herbs, selecting points for acupuncture, will be examined through specific clinical cases. Dietary and lifestyle factors, modes of transmission and infection control from the clients perspective are included.

Credit Points: 6

Learning Outcomes: On successful completion of this unit, it is expected that students will be able to:

- Place in context the history and development of CM dermatology;
- Discuss the aetiology, pathology, main symptomatology and CM pathophysiology of identified dermatological conditions;
- Classify dermatological disorders according to broad CM disease categories (syndromes) and describe typical signs and symptoms associated, treatment principle(s) and appropriate treatment with herbal medicine (including main formulae and modifications, purpose of particular herbs), acupuncture and moxibustion;
- Evaluate dermatological conditions for their suitability for treatment with CM and possible needs to refer to outside health professionals including western medical;
- Justify with explanations the links between disease and syndrome diagnoses, pathogenesis, treatment principle(s), treatment strategies and appropriate prescriptions (acupuncture and/or herbal medicine);
- Explain the cautions and contraindications of treatments for the main dermatological conditions (including potential drug-herb interactions, potential adverse reactions associated with treatment and what to do in the event of an adverse reaction);
- Apply and evaluate treatment principles and strategies in CM dermatology;
- Evaluate roles for acupuncture, moxibustion, Chinese herbal medicine and other CM approaches in the treatment of dermatological conditions (and identify the most appropriate treatment method(s) for a particular disease);
- Explain, in professional and lay communication styles, life-style (including diet, personal hygiene) and infection control issues that impact on the management of dermatological conditions;
- Demonstrate consolidation and establishment of attributes in effective problem solving and clinical reasoning; information management and processing; communication skills; independent and collaborative empowerment; and appropriate social and cultural awareness and responsiveness.

Class Contact: The equivalent of 60 hours per semester comprising lectures and seminars.


Assessment: All assessment items address the CGA levels as indicated in the Learning Outcomes. Assignment One assignment (1500-2000 words). 50% Additional Statements: Students should reasonably expect to devote additional private contact hours of at least 3 times more than the stipulated class contact hours. Practical sessions and workshops have a hurdle requirement of at least 80% attendance. This unit may be delivered in its entirety in burst mode to allow students the opportunity to undertake their VU-approved final clinical internship.

HHT4204 CHINESE MEDICINE CLINICAL INTERNSHIP TWO

Locations: St Albans,

Pre-requisites: HHT4103 Chinese Medicine Clinical Internship 1; or equivalent.

Descriptions: This unit consolidates students in their clinical practice as the Intern Practitioner in approved settings. Students are required to spend time in the School of Health Sciences Teaching Clinics and other approved clinical settings to gain broad clinical experience in both acupuncture and herbs and be guided by a variety of clinical educators. This unit must be completed before off-shore clinical placements can be approved. Internship Practitioner: The student practitioner is expected to conduct themselves in the professional manner as demonstrated by Practitioner Clinicians, working under the supervision of a qualified Chinese medicine practitioner. Skills required of the intern practitioner: take all casenotes, define diagnosis, herbs and main formulae that could the prescription could be based upon, define treatment principles and where appropriate apply acupuncture. The intern practitioner works
independently and assumes full responsibility for the conduct of each consultation, and production of a final prescription. The supervising practitioner is accessed as required. The supervising practitioner must approve prescriptions as suitable and safe to dispense for each client consulted, before the prescription is processed in the dispensary. Internship Mentor: Final year students are to work closely with junior students to assist them in the development of clinical skills. Dispensary supervision: Final year students will spend part of their time as supervisor in the dispensary. This will give the Internship practitioner the opportunity to provide mentorship for junior students and assume responsibility for the running of the practice dispensary. While the supervising practitioner has overall authority, the Internship practitioner must liaise with the supervising practitioner for all financial decisions and must report discipline issues. During the mentorship process, the Intern practitioner has the authority to ensure School of Health Sciences Teaching Clinics policies and procedures are followed. Internship observer status: Clinical hours may also be obtained if a student observes clinical practice with a recognized Herbalist with a minimum of 10 years clinical practice (1520 years minimum recommended). The nature of the observation will need to extend to internship status for approval to be granted.

Credit Points: 16

Learning Outcomes: On successful completion of this unit, it is expected that students will be able to demonstrate the following learning outcomes at a professional practitioner level:

• Demonstrate independence and advanced skills in complete patient management and care;
• Use advanced acupuncture and Chinese medicine theory;
• Demonstrate professional skills, attitude and presentation;
• Reflect on their experience of the consultation process (including diagnosis, treatment approaches and communication skills)
• Conduct a comprehensive Chinese medical assessment including procedures to minimise patient distress, embarrassment or risk of injury, propose a diagnosis and treatment strategy
• Demonstrate understanding of the indications for and skilful use of relevant clinical diagnostic equipment and interpretation of commonly used western diagnostic tests (and describe how results of western diagnostic tests may influence CM diagnosis and treatment strategies);
• Obtain feedback from clients and explain to the client the clinical significance of both negative and positive findings in plain English;
• Locate and needle accurately and safely acupuncture points and demonstrate an advanced level of needling techniques appropriate to client needs;
• Demonstrate a professional level of proficiency in use of and understand the indications for a range of therapeutic techniques including moxa, cupping, gua sha, point injection therapy, dermal hammer, laser, ear acupuncture, electric stimulator and Chinese herbal medicine;
• Demonstrate proficiency in dispensing of a herbal medicine prescription including advice and instructions on preparation and administration of herbal prescriptions and what to do in the event of an adverse reaction;
• Explain and demonstrate the procedures involved in the management of a herbal dispensary including storage, labelling, inventory control and contamination control;
• Record casenotes in a professional manner (legible, accurate, orderly) that would satisfy professional guidelines and would withstand legal scrutiny;
• Assess the patients needs for ongoing treatment or referral, plan a treatment strategy accordingly and communicate the course of treatment and any dietary and lifestyle recommendations to the patient in plain English;
• Liaise and work effectively with clinical educators;
• Mentor students in the clinic;
• Demonstrate consolidation and establishment of attributes in effective problem solving and clinical reasoning; information management and processing; communication skills; independent and collaborative empowerment; and appropriate social and cultural awareness and responsiveness.

Class Contact: A minimum of two hundred and sixty-four (264) hours in an approved clinical setting normally spread across one entire semester (hurdle requirement).


Assessment: Supervised placement comprising successful completion of required 264 clinical hours (pass/fail) (hurdle requirement). Exit exam to be examined by three registered Chinese medicine practitioners, one being a staff member of Victoria University, the other two being independent practitioners in Chinese medicine. Any failed assessment item will need to be discussed in the first instance with the Clinical Co-ordinator. This unit is a hurdle requirement for graduation. Examination Exit Exam comprising one final dispensary practical examination (proficiency standard hurdle requirement); 20% Additional Statement: Clinical sessions have a hurdle requirement of at least 100% attendance.

HHT4275 RESEARCH METHODS FOR ACUPUNCTURE

Locations: To be advised., VU/Gold Coast Institute of TAFE (GCIT)

Pre-requisites: Nil

Descriptions: Introduction to research design; validity and reliability; hypothesis construction and testing; quantitative and qualitative methodologies; experimental and non-experimental designs; epidemiological terms used in acupuncture; ethics issues and protocols; developing and testing Chinese medicine knowledge; application of the scientific method to acupuncture; literature analysis; evaluation of research studies; scientific and literature databases; scientific writing and the communication of research.

Credit Points: 8

Learning Outcomes: On successful completion of this unit, students will be able to:

• Justify research in the field of Chinese medicine (CM);
• Describe various methods of research in quantitative and qualitative research;
• Evaluate research studies and articles, with special emphasis on acupuncture;
• Identify ethical issues associated with conducting research, including CM research;
• Discuss the requirements, limitations and applications of research in acupuncture;
• Explain the roles of databases in research;
• Explain, in professional and lay terms, research studies from the Chinese medicine literature;
• Demonstrate consolidation and establishment of attributes in effective problem solving and clinical reasoning; information management and processing; communication skills;
• Independent and collaborative empowerment; and appropriate social and cultural awareness and responsiveness.

Class Contact: Three (3) hours per week or equivalent for one semester comprising lectures and tutorials. Students should reasonably expect to devote additional private contact hours of at least 3 times more than the stipulated class contact hours

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Assessment: One research assignment (1500 words) (P2, I3, W3, A2, D2) and one test (50% each) (P2, I3, W3, A1, D2). To obtain at least a Pass in the unit, normally all components of assessment must be attempted and passed. Failed assessment item (research assignments) may be resubmitted. Maximum possible marks to be obtained on any resubmission will be 50%. All assessment items address the CGA levels as indicated in the Learning Outcomes.

HHU1171 CLINICAL PRACTICUM 1

Locations: City Flinders, St Albans,

Pre-requisites: Nil.

Descriptions: An introduction to the clinical experience. Observation and initial development of management skills. Observation of treatments and limited client care. Contributions to case discussions. Assistance to more senior students and administrative staff by providing clerical and clinical reception and treatment room support in clinics. This unit requires attendance at University campus clinics, external clinics and field events to observe treatments by senior students and clinicians.

Credit Points: 6

Learning Outcomes: On successful completion of this unit, it is expected that students will be able to:

• Perform, in a polite and friendly manner, client-based clinical and clinical reception skills, including taking and making appointments by telephone or in person, taking payments for treatments, ensuring the clinic is generally clean and tidy, maintaining patient files, and ensuring various clinic supplies are available;
• Perform techniques learnt in the osteopathic science and clinical diagnosis units, such as osteopathic palpation or physical examination techniques, under supervision in relevant clinical settings;
• Commence preliminary examination procedures in a way that minimizes patient distress, embarrassment and risk of injury;
• Participate at a rudimentary level in the decision-making associated with patient cases;
• Discuss accurately and professionally, and reflect on limited aspects of the case (including observations such as patient posture, external markings, as well as the interactions amongst the patient and the treating student and supervisor) during case discussions;
• Commence recording case information in a legal (legible, accurate, orderly) manner.

Class Contact: Two (2) hours per week or equivalent for one semester comprising twelve (12) hours of clinical placement in at least one direct patient care setting and lectures, tutorials and workshops. Clinical placement has a hurdle requirement of at least 90% attendance.


Assessment: Supervised placement comprising successful completion of required twelve (12) clinical hours (pass/fail) (hurdle requirement); one 30-minute multiple choice question (MCQ) test (pass/fail) (hurdle requirement).

HHU1272 CLINICAL PRACTICUM 2

Locations: City Flinders,

Pre-requisites: HHA1171 - ANATOMY HHU1171 Clinical Practicum 1 and evidence of satisfactory completion of a ‘First Aid in the Workplace Level 2’ qualification, or equivalents.

Descriptions: The development and extension of clinic management skills, observation of treatments and limited client care. Contributions to case discussions. Assistance to more senior students and administrative staff by providing clerical and clinical reception and treatment room support in clinics. This unit requires attendance at University campus clinics, external clinics and field events to observe treatments by senior students and clinicians.

Credit Points: 6

Learning Outcomes: On successful completion of this unit, students are expected to be able to:

• Perform, in a professional, efficient and competent manner, client-based clerical and clinical reception skills, including taking and making appointments by telephone or in person, taking payments for treatments, ensuring the clinic is generally clean and tidy, maintaining patient files, and ensuring various clinic supplies are available;
• Perform techniques learnt in the osteopathic science and clinical diagnosis units, such as osteopathic palpation or physical examination techniques, under supervision in relevant clinical settings;
• Conduct preliminary examination procedures in a way that minimizes patient distress, embarrassment and risk of injury;
• Participate at a rudimentary level in the decision-making associated with patient cases;
• Discuss accurately and professionally, and reflect on limited aspects of the case (including observations such as patient posture, external markings, as well as the interactions amongst the patient and the treating student and supervisor) during case discussions;
• Commence recording case information in a legal (legible, accurate, orderly) manner.

Class Contact: A minimum of twenty-four (24) hours comprising twelve (12) hours of placement in an approved direct patient care clinical setting and twelve (12) hours, tutorials and workshops normally spread across one entire semester (hurdle requirement). Clinical placement has a hurdle requirement of at least 90% attendance.


Assessment: Supervised placement comprising successful completion of required twelve (12) clinical hours (pass/fail) (hurdle requirement); One 30-minute (MCQ format) test (graded); One final written examination (pass/fail) (hurdle requirement). Other As Above Pass/Fail
HHU2173 CLINICAL PRACTICUM 3

Locations: City Flinders,

Pre-requisites: Satisfactory completion of year 1 of the HBOS degree; or equivalent.

Descriptions: The development and extension of clinic management skills, observation of treatments and supervised provision of limited client care. Contributions to case discussions. Assistance to more senior students and administrative staff by providing clerical and clinical reception and treatment support in clinics. This unit requires attendance at University campus clinics, external clinics and field events to observe treatments by senior students and clinicians.

Credit Points: 8

Learning Outcomes: On successful completion of this unit, students are expected to be able to:

- Perform, in a professional, efficient and competent manner, client-based clerical and clinical reception skills, including taking and making appointments by telephone or in person, taking payments for treatments, ensuring the clinic is generally clean and tidy, maintaining patient files, and ensuring various clinic supplies are available;
- Perform techniques learnt in the osteopathic science and clinical diagnosis units, such as osteopathic palpation or physical examination techniques, under supervision in relevant clinical settings;
- Conduct preliminary examination procedures in a way that minimizes patient distress, embarrassment and risk of injury;
- Participate at a rudimentary level in the decision-making associated with patient cases;
- Discuss accurately and professionally, and reflect on limited aspects of the case (including observations such as patient posture, external markings, as well as the interactions amongst the patient and the treating student and supervisor) during case discussions;
- Record case information, including complex case notes under supervision, in a legal (legible, accurate, orderly) manner.

Class Contact: A minimum of seventy-seven (77) hours or as negotiated with the appropriate Co-ordinator in an approved direct patient care clinical setting normally spread across the operating weeks of the clinic for that semester (hurdle requirement). Clinical placement has a hurdle requirement of at least 90% attendance.


Assessment: Supervised placement comprising successful completion of required 77 hours with at least 90% attendance (hurdle requirement). Clinic manual or folio reporting completion of negotiated hours, observations and clinical activities (hurdle requirement). Requirements in the manual should be signed by a supervising clinician and recorded in the manner outlined in the clinic manual. Reflective piece (hurdle requirement). Other As Above 100%

HHU2274 CLINICAL PRACTICUM 4

Locations: City Flinders, St Albans,

Pre-requisites: HHU2173 Clinical Practicum 3; or equivalent.

Descriptions: The development and extension of clinic management skills, observation of treatments and supervised examination and provision of limited client care. Contributions to and partial leading of case discussions. Assistance to more senior students and administrative staff by providing clerical and clinical reception and treatment room support in clinics. This unit requires attendance at University campus clinics, external clinics and field events to observe treatments by senior students and clinicians.

Credit Points: 8

Learning Outcomes: On successful completion of this unit, students are expected to be able to:

- Perform, in a professional, efficient and competent manner, client-based clerical and clinical reception skills, including taking and making appointments by telephone or in person, taking payments for treatments, ensuring the clinic is generally clean and tidy, maintaining patient files, and ensuring various clinic supplies are available or re-ordered if necessary, and interact with patients in an easy professional manner;

HHU3175 CLINICAL PRACTICUM 5

Locations: City Flinders,

Pre-requisites: Satisfactory completion of year 2 of the HBOS degree; or equivalent.

Descriptions: The development and extension of clinic management skills, observation of treatments and supervised provision of limited client care. Contributions to and partial leading of case discussions. Assistance to more senior students and administrative staff by providing clerical and clinical reception and treatment room support in clinics. This unit requires attendance at University campus clinics, external clinics and field events to observe treatments by senior students and clinicians.

Credit Points: 8

Learning Outcomes: On successful completion of this unit, students are expected to be able to:

- Perform, in a professional, efficient and competent manner, client-based clerical and clinical reception skills, including taking and making appointments by telephone or in person, taking payments for treatments, ensuring the clinic generally clean and tidy, maintaining patient files, and ensuring various clinic supplies are available;
• Select with a developed aim and perform under supervision in the relevant clinical setting, techniques learnt in the osteopathic science and clinical diagnosis units, such as osteopathic techniques or physical examination techniques;
• Participate actively and professionally in the decision-making associated with patient cases;
• Observe accurately all aspects of the case and take a leading role in the case discussion, on observations such as patient posture, external markings, as well as on the interactions amongst the patient and the treating student and supervisor;
• Record case information in a legal (accurate, clear and legible) manner;
• Write basic patient referral letters and exercise plans.

Class Contact: A minimum of one hundred and thirty-three (133) hours or as negotiated with the appropriate Co-ordinator in an approved direct patient care clinical setting normally spread across the operating weeks of the clinic for that semester (hurdle requirement). Clinical placement has a hurdle requirement of at least 90% attendance.


Assessment: Supervised placement comprising successful completion of required 133 hours with at least 90% attendance (hurdle requirement); Clinic manual or folio reporting completion of negotiated hours, observations and clinical activities (hurdle requirement). Requirements in the manual should be signed by a supervision clinician and recorded in the manner outlined in the clinic manual. Reflective piece (hurdle requirement). Other As Above 100%

HUU3276 CLINICAL PRACTICUM 6

Locations: City Flinders, St Albans,

Pre-requisites: HHD3174 CLINICAL DIAGNOSIS & MANAGEMENT 4; HHO3175 OSTEOPATHIC SCIENCE 5; HHY3174 Pathology 4; HHU3175 Clinical Practicum 5; or equivalents.

Descriptions: Attendance at University clinics, external clinics and field clinics to treat patients, discuss and reflect on patient case management under supervision by registered osteopaths.

Credit Points: 8

Learning Outcomes: On successful completion of this unit, it is expected that students will be able to:
• Manage a patient consultation in co-operation with the clinical supervisor, identifying the presenting problem, developing a basic working diagnosis and selecting a treatment regime that considers the presenting problem with some consideration for ethical, practical and pragmatic concerns;
• Develop a management plan and considering a prognosis that reflects on the patients problem generally including some lifestyle factors;
• Undertake a supervised treatment that utilises the skills developed thus far within a reasonable time and includes the principles of practitionership and utilises the input of supervisors;
• Include junior students in the information collection, recording and delivery of the treatment;
• Reflect on the personal and professional limitations seeking advice from supervisors, lecturers, peers, the internet and other sources to assist with the management of a case. This may include discussing co-treatment protocols or specialist referral if appropriate with the supervising clinician;
• Maintain legal patient histories, write basic referral letters and recognize the need of further referral in conference with Clinical Supervisor and peers;
• Discuss, showing a high level of understanding, common exercise prescriptions and their use in a case;
• Discuss, showing a high level of understanding, the sequence of treatment and advise the patient of this.

Class Contact: A minimum of one hundred and thirty-three (133) hours in an approved direct patient care clinical setting normally spread across the operating weeks of the clinic for that semester (hurdle requirement). Clinical placement has a hurdle requirement of at least 90% attendance.


Assessment: Supervised placement comprising successful completion of required (133) clinical hours (pass/fail) (hurdle requirement) and overall satisfactory report(s) from clinical placement(s) (pass/fail) (hurdle requirement); forty (40) patient observations recorded in the manner outlined in the Clinical manual (minimum 1500 words total) (hurdle requirement); one 30-minute viva voce examination (pass/fail) (hurdle requirement); one 90-minute combined practical and oral examination (OSCE format) (pass/fail) (hurdle requirement).

HHU4187 CLINICAL PRACTICUM 7

Locations: City Flinders, St Albans,

Pre-requisites: HBOS Bachelor of Science - Clinical Sciences; and evidence of satisfactory completion of a current ‘First Aid in the Workplace Level 2 qualification, and a satisfactory police check; or equivalents.

Descriptions: Supervised clinical practice at the VU St Albans and Flinders Lane clinics and VU-approved external agencies to improve knowledge, skills and attitudes in the diagnosis, treatment and management of patients presenting at clinic. Clinical thought from a holistic perspective is reinforced through case conferencing. Field visits to health care facilities as required. This unit is presented in conjunction with HHD4187 Osteopathic Science 7.

Credit Points: 8

Learning Outcomes: On successful completion of this unit, it is expected that students will be able to:
• Manage a patient consultation in co-operation with the clinical supervisor, identifying the presenting problem, developing a basic working diagnosis and selecting a treatment regime that considers the presenting problem with some consideration for ethical, practical and pragmatic concerns;
• Develop a management plan, generally including some lifestyle factors, in co-operation with the Clinical Supervisor and consider a prognosis that reflects on the patients problem;
• Undertake a supervised treatment that uses the skills developed thus far within a reasonable time, includes the principles of practitionership, and utilises the supervisors input;
• Include junior students in the information collection, recording and delivery of the treatment;
• Reflect on their personal and professional limitations, seeking advice from supervisors, lecturers, peers, the internet, and other sources to assist with the management of a case. This may include discussing co-treatment protocols or specialist referral if appropriate with the supervising clinician;
• Maintain legal (accurate, clear and legible) patient histories, write basic referral letters and recognize the need of further referral in conference with Clinical Supervisor and peers;
• Discuss
On successful completion of this unit, it is expected that students will be able to:

- Manage a patient consultation identifying the problem, developing a working diagnosis and selecting a treatment regime that considers the presenting problem in the entirely with consideration for ethical, practical and pragmatic concerns;
- Develop a management plan and prognosis which sets short, medium and long term goals, and takes into account all aspects of the patients problem including lifestyle factors;
- Undertake a supervised treatment that uses the wide variety of skills developed thus far within a reasonable time, and includes the principles of practitionership and the basics of running a practice;
- Mentor junior students and include these students in the treatment planning, assessment and delivery of the treatment;
- Acknowledge their personal and professional limitations seeking advice from supervisors, lecturers, the internet and other sources to assist with the management of a case. This may include co-treatment protocols or special referral if appropriate;
- Maintain legal (accurate, clear and legible) patient histories; write clear and accurate referral letters, requests for special examinations and basic medical-legal reports;
- Incorporate evidence in clinical practice including evidence-based clinical practice guidelines and the use of evidence in clinical decision-making;
- Discuss rehabilitative exercise programs for the most common conditions, including strapping and taping techniques for sports injuries, and common orthopaedic surgical procedures and likely after-effects.

Class Contact: A minimum of two-and-a-half hours in an approved direct patient care clinical setting normally spread across the operating weeks of the clinic for that semester (hurdle requirement). Clinical placement has a hurdle requirement of at least 90% attendance.


Assessment: Supervised placement comprising successful completion of required (210) clinical hours (pass/fail) (hurdle requirement) and overall satisfactory report(s) from clinical placement(s) (pass/fail) (hurdle requirement); completion including documentation of fifty (50) clinical consultations recorded in the manner outlined in the Clinical manual (pass/fail) (hurdle requirement); reflective learning tasks as described in the Clinical manual (hurdle requirement).

HHU4288 CLINICAL PRACTICUM 8

Locations: City, Flinders, St Albans,

Pre-requisites: HHU4187 Clinical Practicum 7; or equivalent.

Descriptions: Supervised clinical practice at the VU St Albans and Flinders Lane clinics and VU-approved external agencies to improve knowledge, skills and attitudes in the diagnosis, treatment and management of patients presenting at clinic. Clinical thought from a holistic perspective is reinforced through case conferencing. Field visits to health care facilities as required. This unit is presented in conjunction with HHD4288 Osteopathic Science 8.

Credit Points: 8

Learning Outcomes: On successful completion of this unit, it is expected that students will be able to:

- Manage a patient consultation identifying the problem, developing a working diagnosis and selecting a treatment regime that considers the presenting problem in the entirely with consideration for ethical, practical and pragmatic concerns;
- Develop a management plan and prognosis which sets short, medium and long term goals, and takes into account all aspects of the patients problem including lifestyle factors;
- Undertake a supervised treatment that uses the wide variety of skills developed thus far within a reasonable time, and includes the principles of practitionership and the basics of running a practice;
- Mentor junior students and include these students in the treatment planning, assessment and delivery of the treatment;
- Acknowledge their personal and professional limitations seeking advice from supervisors, lecturers, the internet and other sources to assist with the management of a case. This may include co-treatment protocols or special referral if appropriate;
- Maintain legal (accurate, clear and legible) patient histories; write clear and accurate referral letters, requests for special examinations and basic medical-legal reports;
- Incorporate evidence in clinical practice including evidence-based clinical practice guidelines and the use of evidence in clinical decision-making;
- Discuss rehabilitative exercise programs for the most common conditions, including strapping and taping techniques for sports injuries, and common orthopaedic surgical procedures and likely after-effects.

Class Contact: A minimum of two-and-a-half hours in an approved direct patient care clinical setting normally spread across the operating weeks of the clinic for that semester (hurdle requirement). Clinical placement has a hurdle requirement of at least 90% attendance.


Assessment: Supervised placement comprising successful completion of required (210) clinical hours (pass/fail) (hurdle requirement) and overall satisfactory report(s) from clinical placement(s) (pass/fail) (hurdle requirement); completion including documentation of fifty (50) clinical consultations recorded in the manner outlined in the Clinical manual (pass/fail) (hurdle requirement); reflective learning tasks as outlined in the Clinical manual (hurdle requirement); one practical clinical examination (pass/fail) (hurdle requirement); one 2-hour written examination (pass/fail) (hurdle requirement).

HHU5189 CLINICAL PRACTICUM 9

Locations: City, Flinders, St Albans,

Pre-requisites: HHU4288 Clinical Practicum 8; and evidence of satisfactory completion of a current ‘First Aid in the Workplace Level 2’ qualification, and a satisfactory police check; or equivalents.

Descriptions: Supervised clinical practice at the VU St Albans and Flinders Lane clinics and VU-approved external agencies to improve knowledge, skills and attitudes in the diagnosis, treatment and management of patients presenting at clinic. Clinical thought from a holistic perspective is reinforced through case conferencing with written and oral presentations to peers. Advanced skills in dealing with difficult and problematic cases, and advanced investigative skills (radiological, medical) are also included. Field visits to health care facilities as required.

Credit Points: 12

Learning Outcomes: On successful completion of this unit, it is expected that students will be able to:

- Manage a patient consultation identifying the problem, developing a working diagnosis and selecting a treatment regime that considers the presenting problem in the entirely with consideration for ethical, practical and pragmatic concerns;
- Develop a management plan and prognosis that sets short, medium and long term goals, and takes into account all aspects of the patients problem including lifestyle factors;
- Undertake a supervised treatment that uses the wide variety of skills developed thus far within a reasonable time, and includes the principles of practitionership and the basics of running a practice;
- Mentor junior students and include these students in the treatment planning, assessment and delivery of the treatment;
• Reflect on the personal and professional limitations seeking advice from supervisors, lecturers, the internet, and other sources to assist with the management of a case. This may include co-treatment protocols or specialist referral if appropriate;

• Maintain legal (accurate, clear, legible) patient histories, write clear and accurate referral letters, requests for special examinations and basic medical-legal reports;

• Evaluate and use evidence in clinical practice including evidence-based practice, evidence to support clinical decision making and justify the use of evidence in contemporary practice;

• Apply exercise programs for most common conditions, strapping and taping techniques for sports injuries, common orthopaedic surgical procedures and likely after-effects.

Class Contact: A minimum of two hundred and nineteen (219) hours in an approved direct patient care clinical setting normally spread across the operating weeks of the clinic for that semester (hurdle requirement). Clinical placement has a hurdle requirement of at least 90% attendance.


Assessment: Supervised placement comprising successful completion of required (219) clinical hours (pass/fail) (hurdle requirement) and overall satisfactory report(s) from clinical placement(s) (pass/fail) (hurdle requirement); completion including documentation of eighty-five (85) clinical consultations recorded in the manner outlined in the Clinical manual (pass/fail) (hurdle requirement); reflective learning tasks as outlined in the Clinical manual (hurdle requirement).

HHUS5280 CLINICAL PRACTICUM 10

Locations: City Flinders, St Albans, Melbourne, City Flinders, St Albans

Pre-requisites: HHUS189 Clinical Practicum 9; or equivalent.

Descriptions: Supervised clinical practice at the VU St Albans and Flinders Lane clinics and VU-approved external agencies. Further advancement of skills in medical and osteopathic diagnosis, ethics and business practice, advanced technique skills, and total case management. Reinforcement of integrated clinical thought from a holistic perspective via case conferencing to discuss cases and prepare for the final clinical practicum exam; written and oral presentations to peers; tutorials on advanced skills in dealing with difficult and problematic cases; and in advanced investigative skills (radiological, medical). Field visits to health care facilities and external agencies.

Credit Points: 12

Learning Outcomes: On successful completion of this unit, it is expected that students will be able to:

• Competently demonstrate a full range of osteopathic techniques;

• Competently demonstrate a wide range of clinical and patient management skills;

• Take primary responsibility for patient care from the earliest stage of their practice careers;

• Devise integrated case management plans for patients, incorporating preventive care strategies;

• Communicate effectively with other health and legal professionals, both verbally and in writing;

• Explain the business skills required to run an osteopathic practice.

In particular, students should display the following skills:

• Manage a patient consultation identifying the problem, developing a working diagnosis and selecting a treatment regime that considers the presenting problem in the entirety with consideration for ethical, practical and pragmatic concerns;

• Develop a management plan and prognosis that sets short, medium and long term goals, and takes into account all aspects of the patients problem including lifestyle factors;

• Undertake a supervised treatment that uses the wide variety of skills developed thus far within a reasonable time, and includes the principles of practitioner and the basics of running a practice;

• Mentor junior students and include these students in the treatment planning, assessment and delivery of the treatment;

• Evaluate the personal and professional limitations when seeking advice from supervisors, lecturers, the internet, and other sources to assist with the management of a case. This may include co-treatment protocols or specialist referral if appropriate;

• Maintain legal (accurate, clear and legible) patient histories, write clear and accurate referral letters, requests for special examinations and basic medical-legal reports;

• Communicate the working diagnosis, management plan, proposed referrals, contraindications and treatment risks clearly and concisely to the patient and supervisor;

• Evaluate and use evidence in clinical practice including evidence-based practice, evidence to support clinical decision making and evidence in contemporary practice;

• Plan and implement exercise programs for most common conditions, strapping and taping techniques for sports injuries, common orthopaedic surgical procedures and the likely after-effects, and the difference between the application of indirect and direct techniques in the patient setting.

Class Contact: A minimum of two-hundred and nineteen (219) hours in an approved direct patient care clinical setting normally spread across the operating weeks of the clinic for that semester (hurdle requirement). Clinical placement has a hurdle requirement of at least 90% attendance.


Assessment: Supervised placement comprising successful completion of required (219) clinical hours (pass/fail) (hurdle requirement) and overall satisfactory report(s) from clinical placement(s) (pass/fail) (hurdle requirement); completion including documentation of eighty-five (85) clinical consultations recorded in the manner outlined in the Clinical manual (pass/fail) (hurdle requirement); reflective learning tasks as outlined in the Clinical manual (hurdle requirement).
**HHY1271 PATHOLOGY 1**

Locations: City Flinders,

Pre-requisites: HHA1171 Anatomy 1; HHP1171 Physiology 1, RBF1170 Cell Structure and Function; or equivalents

Descriptions: Content will include an introduction to cell injury; acute and chronic inflammation; mechanisms of tissue repair; immunology; abnormalities of blood supply including ischemia, thrombosis, DIC, circulatory failure and atherosclerosis; infection; neoplasia and oedema.

Credit Points: 6

Learning Outcomes: On successful completion of this unit, students are expected to be able to:

- Accurately use the vocabulary of basic pathology;
- Describe how cells respond to stress;
- Explain the macroscopic manifestations of acute and chronic inflammation in terms of the microscopic events occurring in the tissues including cellular, vascular, and biochemical events;
- Describe the long-term effects of chronic inflammation on affected tissues;
- Describe the basic cellular events occurring during the repair of skin trauma;
- Explain the pathogenesis and describe the key features of the basic types of hypersensitivity;
- Recognise the pathological processes that can cause ischaemia and thrombosis, and discuss the complications of ischaemia and thrombosis;
- Describe the pathophysiological mechanisms of circulatory failure, including shock;
- Describe the factors involved in the development of infectious disease both from the perspectives of the pathogen and from the host;
- Describe the defining features of malignant and benign neoplasia, at both macroscopic and microscopic levels;
- Describe the types of oedema and discuss the pathophysiological mechanisms underpinning each type.

Class Contact: Two (2) hours per week or equivalent for one semester comprising lectures and tutorials.


Assessment: One 45-minute written test (20%); one 2-hour final written examination (80%).

**HHY2172 PATHOLOGY 2**

Locations: City Flinders,

Pre-requisites: HDH1271 - CLINICAL DIAGNOSIS & MANAGEMENT 1

Descriptions: Common and life-threatening diseases affecting the haematological, cardiovascular, renal and urogenital systems will be discussed. Particular emphasis will be given to conditions that are of special interest to osteopaths, in Australia.

Credit Points: 6

Learning Outcomes: On successful completion of this unit, students are expected to be able to:

- Explain the pathological processes and describe their manifestations in the haematological, cardiovascular, renal and urogenital systems;
- Discuss the development of the pathological process through dysfunction to disease in the haematological, cardiovascular, renal and urogenital systems;
- Discuss the causes or risk factors associated with common and serious haematological, cardiovascular, renal and urogenital diseases, and describe how those causes or risk factors are determined;
- Describe the clinical presentations of common and serious haematological, cardiovascular, renal and urogenital diseases, including those diseases notable in Australia;
- Explain the allopathic medical approach to diagnosis, prognosis and principles of management, and the evidential basis for this approach;
- Distinguish amongst common life-threatening haematological, cardiovascular, renal and urogenital conditions, including recognising problems that require referral to other health care practitioners;
- Offer preventative health advice about common and serious haematological, cardiovascular, renal and urogenital diseases.

Class Contact: Thirty-six (36) hours or equivalent for one semester comprising lectures and tutorials.

Required Reading: As no texts appropriate to the content of this unit are currently available, suitable reading material will be provided by the unit coordinator.
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Assessment: Tutorial Participation Tutorial Questions 20% In order to obtain a pass or higher in this graded unit normally students must obtain a pass in both assessment tasks.

HHY3174 PATHOLOGY 4

Locations: City Flinders, St Albans,
Pre-requisites: HHY2273 Pathology 3; or equivalent.

Descriptions: Content will include an introduction to the following conditions affecting the joints and connective tissues of the body: bone fractures and their healing; osteomyelitis; osteoporosis; osteomalacia; Paget’s disease; fibrous dysplasia; Osteogenesis Imperfecta; osteoarthrits; hypertrophic osteoarthropathy; degenerative disease of the intervertebral disc; acute I/V disc herniation; rheumatoid disease; ankylosing spondylitis; Reiter’s disease; psoriatic arthritis; enteropathic arthritis; gout; CPPD deposition disease; systemic lupus erythematosus; progressive systemic sclerosis; polymyosits; dermatomyositis polymyalgia rheumatica; mixed connective tissue disease. Common and life-threatening diseases will be highlighted. Particular emphasis will be given to conditions that are of special interest to osteopaths in Australia.

Credit Points: 8

Learning Outcomes: On successful completion of this unit, students are expected to be able to:

- Explain with confidence the manifestations and causes of common and serious diseases of the joints and connective tissues of the human body;
- Discuss the development of the pathological process through dysfunction to disease evident in joints and connective tissues;
- Discuss the causes or risk factors associated with common and serious joint diseases, and describe how those causes or risk factors are determined;
- Describe the clinical presentations of common and serious diseases affecting joints and connective tissues, including the diseases of note in Australia;
- Discuss the complications, diagnoses and basic treatments of conditions affecting joints and connective tissues;
- Distinguish amongst common life-threatening orthopaedic and rheumatology conditions, including recognising problems that require referral to other health care practitioners.

Class Contact: Two (2) hours per week or equivalent for one semester comprising lectures and tutorials.


Assessment: One 45-minute written test (20%); one 2-hour written examination (80%).

HHY4285 PATHOLOGY 5

Locations: St Albans,
Pre-requisites: HBOS Bachelor of Science - Clinical Sciences; or equivalent.

Descriptions: Introduction to aetiology, clinical presentation, diagnosis, treatments and epidemiology of conditions affecting the central and peripheral nervous systems: intracranial space occupying lesions; primary tumours of the CNS; cerebrovascular disease; CNS infections; demyelinating diseases of the CNS: multiple sclerosis; degenerative conditions of the CNS: Alzheimer’s disease; Parkinson’s disease; motor neuron disease; epilepsy; peripheral neuropathy polyneuropathy; myasthenia gravis; fibromyalgia.

Credit Points: 8

Learning Outcomes: On successful completion of this unit, students are expected to be able to:

- Use an expanded their vocabulary in the area of pathology;
- Explain the aetiology, pathological stages, clinical picture, complications, and diagnosis of neurological diseases affecting the CNS and PNS;
- Discuss the basic treatments for neurological diseases affecting the CNS and PNS, and how those treatments might impact on the practising osteopath;
- Give a brief epidemiological profile of the CNS and PNS diseases, and especially any profiles relevant to the population in Australia.

Class Contact: Two forty-five (45) hours or equivalent normally spread over one semester comprising lectures, tutorials and tutorials.


Assessment: One 45-minute mid-semester test (20%); one 2-hour written examination (80%).

RBF1140 INTRODUCTION TO FOOD, NUTRITION AND HEALTH 1

Locations: Footscray Park,
Pre-requisites: Nil.

Descriptions: This unit provides students with an introduction to nutrition and food science. The unit comprises an introduction to the food industry, its components and organisation, both in Australia and internationally; the composition of foods, food processing and food safety: introduction to the preservation and processing of fruits and vegetables, grains and oil seeds, dairy products, meat, poultry, fish and beverages.

Credit Points: 12

Learning Outcomes: On successful completion of this unit, students are expected to be able to:

1. Describe the food industry in Australia and overseas;
2. Discuss the composition of foods, including food composition data;
3. Explain the basic principles of food processing and the importance of food safety;
4. Explain at an introductory level, preservation techniques for various food commodity groups.

Class Contact: Forty-eight (48) hours or equivalent for one semester comprising lectures and tutorial/demonstrations.


Assessment: Assignments and tests (40% each); one final examination (60%). In order to obtain a pass or higher in this graded unit, normally all components of assessment must be passed.

Assignment and tests 40%

RBF1145 INTRODUCTION TO FOOD, NUTRITION AND HEALTH 2

Locations: Werribee,
Pre-requisites: Nil.

Descriptions: Principles of nutrition and nutritional aspects of various food commodities and their impact on health.

Credit Points: 12
Learning Outcomes: To be advised.

Class Contact: four hours per week comprising of three h of lectures and one hour of tutorial/demonstration.

Required Reading: Parker, R., 2003, Introduction to Food Science, Delmar, Thomson Learning Inc. Albany, USA.

Assessment: Assignment (2x2000 words), 40%; Examination (1x3 hrs), 60%.

RBF1150 GLOBAL ENVIRONMENTAL ISSUES

Locations: Footscray Park,

Pre-requisites: To be advised.

Descriptions: This unit highlights the various aspects of science through the use of practical and theoretical case studies. The unit concentrates on the pure and applied sciences and their relevance and applications to historical and contemporary global environmental issues.

Students will be required to explore areas such as population regulation in key emerging economies; population growth momentum; environmental history and spectrum of environmental thought; environmental groups and their work; connections amongst social justice and environmental issues (eg., education levels, status of women, human rights, relative wealth); resource consumption, pollution and renewables in developing and developed countries; deforestation and biodiversity loss; water and soil resources; food production, biotechnology and appropriate agricultures; energy resources; chemical cycles including the greenhouse effect and ozone depletion; the roles of mathematics, physics, chemistry, biology, ecology and computing in global environmental issues. Topics will be developed within the context of risk management and ethical and moral frameworks.

Credit Points: 12

Learning Outcomes: On successful completion of this unit, students are expected to be able to:

- explain the interconnectedness amongst things and actions;
- define terms commonly used in global environmental issues;
- discuss the breadth of coverage of subjects contributing to an appreciation of environmental issues;
- discuss the connections amongst actions and lifestyles in developed and less-developed countries;
- develop a sense of self-confidence in presentation of their ideas and tolerance toward others and the ideas of others;
- debate a variety of environmental issues; and
- critically examine their own life in relation to various environmental issues.

Class Contact: Forty-eight (48) hours or equivalent for one semester comprising lectures and tutorials.


Assessment: Case Study Case Study and Assignments 50% In order to obtain a pass or higher in this graded unit, normally all components of assessment must be passed.

Other Field Work Reports 40%

RBF1170 CELL STRUCTURE AND FUNCTION

Locations: City Flinders,

Pre-requisites: Nil

Descriptions: This unit comprises two modules: Module 1: Eukaryotic cell; Module 2: Microbiology. The eukaryotic cell: the structure and function of organelles, in particular the cell membrane, smooth endo-plasmic reticulum, Golgi apparatus, cytoskeleton and nucleus. Processes include cell-cell interactions, production and packaging, cell motion, meiosis and mitosis. Microbiology: microbial structure, categories of infective agents, normal flora, introduction to the major pathogens, transmission of infection, sterilization and disinfection, host and microbe interactions.

Credit Points: 6

Learning Outcomes: On successful completion of this unit, students are expected to be able to:

- Identify structures within human cells;
- Describe in detail cell structures and their respective functions;
- Integrate biological information at the chemical and cellular levels;
- Discuss basic microbiology with respect to broad categories of pathogenic organisms;
- Explain the spread and transmission of infectious agents;
- Explain host-microbe interactions and how microbes cause disease;
- Justify the importance of sterilization and disinfection;
- Conduct sterilization and disinfection procedures to a level required for a clinical environment.

Class Contact: Two (2) hours per week or equivalent for one semester comprising lectures and laboratory practicals. Practical sessions have a hurdle requirement of at least 90% attendance.

Required Reading: Nil.

Assessment: Participation in practical sessions with at least 90% attendance unless well-documented acceptable reasons are provided (hurdle requirement). Tests Tests and laboratory reports 20%
RBF2141 FOOD COMPONENTS AND INTERACTIONS

Locations: Werribee,

Pre-requisites: RBF1140 - INTRODUCTION TO FOOD, NUTRITION AND HEALTH 1

Descriptions: Food constitutes; water; structure, chemistry, stability and functional properties of proteins, carbohydrates, fats and oils, vitamins and minerals. Food colour, texture and flavour. Reactions leading to deterioration of foods: oxidative deterioration and rancidity, anti-oxidants, browning reactions; food additives, natural and synthetic colourants and flavouring agents; gels, colloids, foams and emulsions. This unit will also address the effects of processing on basic components and interactions amongst food components.

Credit Points: To be advised.

Learning Outcomes: On successful completion of this unit, students are expected to be able to:

- Describe and assess the structural and compositional features of food macromolecules;
- Predict the functional properties of food molecules based on their chemical properties;
- Recognise and evaluate the key chemical features of food systems;
- Develop novel food systems based on complex interactions of their main macromolecules.

Class Contact: Forty-eight (48) hours or equivalent for one semester comprising lectures, tutorials and practise sessions.


Assessment: In order to obtain a pass or higher in this graded unit, normally all components of assessment must be passed. Assignment 2000 words 20%

RBF2210 NUTRITION AND FOOD ANALYSIS 1

Locations: Werribee,

Pre-requisites: RBF1140 - INTRODUCTION TO FOOD, NUTRITION AND HEALTH 1 OR equivalent.

Descriptions: To study experimental techniques as applied to nutrition and food studies. Rationale for experimental procedures used in nutrition, experimental design, statistical analysis, anthropometry, feeding trials, N balance studies, amino acid score, digestibility of food, nutritional survey and data collection, dietary instrument design, diet analysis, calorimetry, analysis of specific nutrients, use of analysis software, site visits. Pitfalls and complications encountered in human nutrition experimentation, and strategies commonly used to overcome these.

Credit Points: 12

Learning Outcomes: To be advised.

Class Contact: Three hours per week comprising of lecture/tutorial/laboratory and site visits


Assessment: Assignments 20%, examination 50%, practical work 30%.

RBF2215 NUTRITION AND FOOD ANALYSIS 2

Locations: Werribee,

Pre-requisites: RBF1145 Introduction to Food, Nutrition and Health Science and RCS1601 Chemistry A and RCS1602 Chemistry B or equivalent.

Descriptions: Rationale for experimental procedures used in nutrition, experimental design, statistical analysis, anthropometry, feeding trials, N balance studies, amino acid score, digestibility of food, nutritional survey and data collection, dietary instrument design, diet analysis, calorimetry, analysis of specific nutrients, use of analysis software, site visits. Pitfalls and complications encountered in human nutrition experimentation, and strategies commonly used to overcome these.

Credit Points: 12

Learning Outcomes: To be advised.

Class Contact: Four hours per week, comprising two hours of lecture and two hours of lab


Assessment: Assignment (2x2000 words), 20%; Examination (1x3 hrs), 50%; Practical work (6 lab reports), 30%.

RBF2218 NUTRITION AND COMMUNITY HEALTH

Locations: Werribee,

Pre-requisites: RBM 2750 Nutrition or equivalent.

Descriptions: Importance of community nutrition in public health promotion. Health behaviour theories. Food security. Community nutrition throughout the lifespan (breastfeeding promotion; childhood and adolescence; adults and chronic disease prevention; nutrition-related problems in the elderly). Development of effective communication programs. Education and intervention programs in locating public health data and health epidemiology. Cultural competency and International nutrition.

Credit Points: 12

Learning Outcomes: To be advised.

Class Contact: Four hours per week, comprising of three hours of lecture and one hour of tutorial.


Assessment: Assignment (2x2000 words), 20%; Examination (1x3 hrs), 50%; Case study 1, 30%.

RBF2390 MOLECULAR GENETICS

Locations: Werribee,

Pre-requisites: RBF2520 Biochemistry I.

Descriptions: Introduction to developments at the forefront of molecular biology of gene structure and function and molecular genetics. The subject will build on material covered in Biochemistry I and Cell Biology and strengthen the foundations for the unit ‘Genetic Engineering’ in the final year of the degree program. Main topics include: organisation of eukaryotic genomes including repetitive and nonrepetitive DNA sequences, multigene families, pseudogenes; organisation of prokaryotic genomes; genomic rearrangements including transposable genetic elements, retroviruses and other mechanisms; genetic rearrangements in the immune system, replication of DNA, telomeres and telomeras, methylation and imprinting of DNA, mutations and repair mechanisms, regulation of gene expression, specialised genetic systems including genes in early development, genes responsive to hormones and heat shock.
Learning Outcomes: To be advised.

Assessment: In order to obtain a pass or higher in this graded unit, normally all components of assessment must be passed.

Assignment Field Studies 50%

RBF2620 AUSTRALIAN PLANTS

Locations: St Albans,

Pre-requisites: RBF1310 Biology 1, RBF1320 Biology 2; or equivalents.

Descriptions: An understanding of:

• the diversity and evolution of plants and fungi, with emphasis on Australian native plants and fungi;
• the characteristic morphology and life history of the major plant groups and fungi;
• the basic principles of the systematics of Australian plants including biological nomenclature, identification and classification; and
• how the biogeography of Australian plants can be explained by their life history and the history of the continent, particularly to instil an understanding of how and why Australia has evolved a diverse and highly endemic primarily sclerophyllous flora where the forests and woodlands are dominated by two tree genera, Eucalyptus and Acacia.

Credit Points: 12

Learning Outcomes: On successful completion of this unit, students are expected to be able to:

• Identify key morphological features and life history characteristics of plants;
• Distinguish major families, genera and species of Australian plants;
• Develop tools for collecting and preserving plant specimens and
• Use high-level identification guides to determine a range of plant species.
• Communicate in written form complex information on various plant families and their evolutionary history.

Class Contact: Forty-eight (48) hours or equivalent for one semester comprising lectures and practicals.


Assessment: In order to obtain a pass or higher in this graded unit, normally all components of assessment must be passed.

Assignment Practicals 60%
**RBF2640 AUSTRALIAN ANIMALS**

**Locations:** St Albans,

**Pre-requisites:** RBF1310 Biology 1 (or RBJ1174 Human Physiology), RBF1320 Biology 2, or equivalents.

**Descriptions:** Diversity of animal life, with an emphasis on the Australian fauna; the science of systematics, including cladistic analysis; Bauplans; evolution and origin of biodiversity in marine and terrestrial environments; historical and ecological biogeography, including faunal regions and habitat types; ‘uniqueness’ of the Australian fauna.

**Credit Points:** 12

**Learning Outcomes:** On successful completion of this unit, students are expected to be able to:

- Describe characteristic features of major animal phyla;
- Outline the principles of ecological biogeography in relation to the fauna of Australia;
- Describe the features adopted by animals for living in either a marine, freshwater or terrestrial environment.

**Class Contact:** Forty-eight (48) hours or equivalent for one semester comprising lectures and practical classes composed mainly of field excursions.


**Assessment:** In order to obtain a pass or higher in this graded unit, normally all components of assessment must be passed. Project Group 40%

**RBF3240 PRINCIPLES OF FOOD PRESERVATION**

**Locations:** Werribee,

**Pre-requisites:** RBF1140 Introductory Food


**Credit Points:** 12

**Learning Outcomes:** To be advised.

**Class Contact:** Four hours per week comprising lectures/tutorials for one semester.

**Required Reading:** To be advised by lecturer.

**Assessment:** Assignments and tests, 30%; final examination, 70%.

**RBF3210 ENVIRONMENTAL REHABILITATION**

**Locations:** St Albans,

**Pre-requisites:** RBF1310 - BIOLOGY 1 or equivalents; or at the discretion of the Course Co-ordinator.

**Descriptions:** Introduction to a range of tools that will assist in the rehabilitation of Victoria’s terrestrial environments and communities. Topics include the ecological parameters and adaptations of organisms in diverse environments and the key ecological relationships amongst organisms. Case studies of rehabilitation projects based on approaches using ecological theory will be included. Practicals will include hands-on experience in the use of the Native Vegetation Management Framework, the Habitat Hectare approach, development of land management plans, and specific threatened species rehabilitation programs.

**Credit Points:** 12

**Learning Outcomes:** On successful completion of this unit, students are expected to be able to:

- Apply ecological principles to environmental rehabilitation practices;
- Work collaboratively to develop a land management plan;
- Communicate in oral and written form to professionals and the general community approaches to rehabilitation and complex ecological principles;
- Choose the correct method of assessment and management of communities and specific species;
- Apply the principles of the Habitat Hectare approach and the Native Vegetation Management Framework to environmental assessments.

**Class Contact:** Forty-eight (48) hours or equivalent per semester, timetabled as a block, comprising lectures, tutorials, practical workshops and site visits.


**Assessment:** In order to obtain a pass or higher in this graded unit, normally all components of assessment must be passed. Project Group 40%

**RBF3230 ANIMAL FOOD PROCESSING**

**Locations:** Werribee,

**Pre-requisites:** Nil

**Descriptions:** World animal food resources: nature, distribution and production. Meat and Meat Products: muscle composition, structure and conversion to meat, post mortem glycolysis and meat quality, nutritional and sensory properties, chilling, freezing, curing and processing. Marine products: composition, structure, quality, spoilage, preservation and processing including chilling, freezing, salting, drying, smoking and fermenting. Milk and Milk Products: composition, chemical and physical properties of milk processing of milk including butter, powdered, fermented and fractionated product manufacture, by-product utilisation. Egg and Poultry Products: structure and composition of egg, storage and preservation of eggs, egg products, poultry processing and poultry products.

**Credit Points:** 6

**Learning Outcomes:** To be advised.

**Class Contact:** Three hours per week comprising lecture and tutorial.

**Required Reading:** To be advised by the instructor.

**Assessment:** Assignment (2x3000 words), 50%; Exam (1x three h), 50%.
**RBF3235 PLANT FOOD PROCESSING**

**Locations:** Werribee,

**Pre-requisites:** Nil


**Credit Points:** 6

**Learning Outcomes:** To be advised.

**Class Contact:** Three hours per week comprising lecture and tutorial.


**Assessment:** Assignment (2x3000 words), 50%; Exam (1x three h), 50%.

**RBF3240 FUNCTIONAL FOODS**

**Locations:** Werribee,

**Pre-requisites:** RBF1140 Introduction to Food, Nutrition and Health Science

**Descriptions:** This unit examines the role and potential of functional ingredients and foods in human nutrition; natural anti-microbial substances in human nutrition; the role of intestinal flora in human health; prebiotics, probiotics, probiotic bacteria and symbiosis.

**Credit Points:** 12

**Learning Outcomes:** To be advised.

**Class Contact:** Three hours per week comprising lectures/tutorials for one semester.


**Assessment:** Assignments, 40%; final examination, 60%.

**RBF3250 FOOD SAFETY AND QUALITY**

**Locations:** Werribee,

**Pre-requisites:** RBF1140 Introduction to Food, Nutrition and Health Science.

**Descriptions:** Major factors used in assessing food quality, sampling, control charts, shelf-life testing, product recalls, collaborative testing, cleaning and sanitizing, rapid testing methods, government regulations, and overall quality plans such as HACCP. Human sensory perception of food components and their interactions and role of sensory methods in assessment of food quality and safety. Toxicology and allergenicity of foods.

**Credit Points:** 12

**Learning Outcomes:** To be advised.

**Class Contact:** Four hours per week comprising three hours of lectures and one hour of tutorial/demonstration/practical work.

**Required Reading:** To be advised by the lecturer.

**Assessment:** Assignment (2x2500 words), 30%; Exam (1x three h), 50%; Practical reports/class tests 2/2, 20%.

**RBF3255 PRODUCT DEVELOPMENT**

**Locations:** Werribee,

**Pre-requisites:** RBF1140 - INTRODUCTION TO FOOD, NUTRITION AND HEALTH 1

**Descriptions:** Product idea generation; concept development and testing; Marketing-strategy development, Product and process development process (project planning, formulation development, process development, shelf-life testing); Consumer testing: Market trial methods and estimation of market size; Product specifications (raw materials, process, finished product); Packaging and labelling, product evaluation, product costing and pricing; Production planning; Market development and product launch.

**Credit Points:** 6

**Learning Outcomes:** To be advised.

**Class Contact:** Three hours per week comprising two hours of lectures and one hour of tutorial/demonstration/practical work.


**Assessment:** Assignment (1x3000 words), 20%; Exam (1x three h), 50%; Practical reports/class tests 2, 30%.

**RBF3350 ENVIRONMENTAL PHILOSOPHY**

**Locations:** St Albans,

**Pre-requisites:** Nil.

**Descriptions:** Philosophy: a brief overview of Ancient, Medieval and Modern Western philosophy. Environmental Philosophy as the search for principles for guidance in conducting our lives in a practical way that is beneficial to the environment and as a spectrum of thought from Anthropocentrism to Ecocentrism. A Focus on Ecocentrism, in particular what informs Deep (or Transpersonal) Ecology and the role of nature-based religions and patriarchy in the development of Ecofeminism.

**Credit Points:** 12

**Learning Outcomes:** On successful completion of this unit, students are expected to be able to:

- Write about and discuss moral concerns arising from interaction between people and the natural world;
- Explain their position regarding problems such as human overpopulation, biodiversity protection, energy use and provision of food and water - and relate it to various ethical positions;
- Reflect on their own lives from an environment ethics perspective.

**Class Contact:** Three hours per week for one semester


**Assessment:** Major paper (40%); biography (20%); leading discussion (20%); evidence of prior reading of weekly material (20%).

**RBF3540 LEADERSHIP AND THE ENVIRONMENT**

**Locations:** St Albans,

**Pre-requisites:** Nil.

**Descriptions:** Three phases in the history of leadership studies: the characteristics or traits of leaders from studies done in the first half of this century; the thirty years of theories of what would lead to effective leader behaviour in certain situations; the 1980's and after when a broader picture of what might explain leader success began to develop. The current place of ethics, morals, values, feelings and power as sources of information regarding leader behaviour. Leadership as an art and as a service - as a weaving of relationships rather than an amassing of information. The strong links
which exist between holistic environmentalism and emerging leadership theory. Case studies from business, government and environmental organisations of successful leaders who show evidence of wholeness, care and service for the other.

Credit Points: 12

Learning Outcomes: On successful completion of this unit, students are expected to be able to:

• Discuss leadership theories such as traits, behaviour, transformational and compassionate leadership;
• Analyse leadership articles in terms of contingency theory, power, charisma, vision, symbolism, culture, density values, ethics, courage, gender and teamwork;
• Explain connections between holistic environmentalism and emerging leadership theory.

Class Contact: Three hours per week.


Assessment: Major paper (30%); leadership folder (20%); examination (50%).

RBF3600 AQUATIC ECOSYSTEMS

Locations: To be advised., St. Albans

Pre-requisites: RBF 1310 Biology 1, RBF 1320 Biology 2, RBF 2610 Fundamentals of Ecology

Descriptions: This subject provides an overview to the ecology and management of freshwater, estuarine and marine ecosystems in southern Australia. The material covered includes: ecology of upland and lowland-floodplain rivers (including impact of flow regulation and environmental water allocations); ecology of lakes and reservoirs (including algal bloom control and impacts of recreation); wetland ecology and management (including international conventions on waterbirds); seagrass, mangrove and saltmarsh ecology and management; significance of rocky shore habitats in southern Australia; estuarine ecology (with particular emphasis on Port Phillip Bay and the Gippsland Lakes) and environmental degradation and repair of aquatic systems.

Credit Points: 12

Learning Outcomes: To be advised.

Class Contact: Four hours per week, comprising 1 x two hour lecture, 1 x one hour tutorial/directed learning and 2 x day-long field excursions.


Assessment: Within-semester (on-going) assessment at Weeks 6 and 13 (60 %) plus two field reports (40 %).

RBF3610 BIOSTATISTICS

Locations: To be advised., St. Albans

Pre-requisites: RMA1110 Mathematics for the Biological and Chemical Sciences 1 and RMA1120 Statistics for the Biological and Chemical Sciences 1; or equivalents

Descriptions: This unit introduces students to the practical use of statistics in the biological, ecological and health sciences. Particular emphasis is given to experimental design and ‘real world’ use of statistical procedures. Material covered includes: Revision of statistical concepts and the significance of statistics/biometrics in biological/environmental analysis. Distributions and the nature of data; the use of correlation and regression in developing hypotheses. Sampling regimes and units, confounding variables, hypothesis testing, parametric versus non-parametric procedures and assumptions, post-hoc testing. Design tools for experimental design and field collection of data; type-I versus type-II errors, statistical power and the use of statistical power in experimental design. BACI models and design issues; pseudoreplication and true replication. Optimisation of sampling regime for a given sampling unit and variance. Inferential procedures, multiple factorial designs, univariate versus multivariate procedures in biological and environmental programs.

Credit Points: 12

Learning Outcomes: On successful completion of the unit, students are expected to be able to:

• Describe the main types of sampling distribution;
• Generate appropriate descriptive statistics from data obtained through environmental investigation;
• Utilise techniques such as regression, correlation, univariate and multivariate analysis;
• Critically evaluate experimental and statistical models;
• Select appropriate statistical methods for the testing of hypotheses;
• Generate multifactorial experimental designs;
• Apply parametric and non-parametric methods to biometric data as appropriate;
• Control for confounding variables in experimental investigations;
• Recognise types of sampling error;
• Interpret the output from statistical testing.

Class Contact: Four hours per week over one semester, comprising two hours of lectures and two hours of interactive practicals/tutorials per week.


Assessment: Assignments (20%); Examinations (80%).

RBF3620 CONSERVATION AND SUSTAINABILITY

Locations: To be advised., St. Albans (offered subject to minimum enrolments in 2004)

Pre-requisites: RBF1310 Biology 1, RBF1320 Biology 2, RBF2610 Fundamentals of Ecology, or at the discretion of the subject co-ordinator

Descriptions: The subject ties together, in both theoretical and practical ways, concepts and practices for maintaining biological diversity, and how these concepts and practices can be integrated with social and economic needs: the development of conservation theory and practice in Australia; extinction and its significance, including pathways to extinction; the meanings, levels and interpretation of concepts of biodiversity; ecological and adaptive management approaches to conservation and recovery, including design of reserves, setting priorities, ex-situ (captive breeding, reintroduction and translocation). Practical field studies and site visits will investigate the contributions of zoo’s, national and state parks, friends groups, councils and shires, other government agencies and private landholders to the conservation and recovery of plant and animal species, from insects to mammals, and from mushrooms to trees. The subject will also include practical appraisals of techniques used to determine integrity of ecosystems, landscapes and overall environment, the contributions made by biodiversity to ecosystem services and integrated methods for recovery and sustainable management of species and ecosystems.

Credit Points: 12

Learning Outcomes: To be advised.

Class Contact: Four hours per week for one semester, comprising two hours of lectures and two hours of practical.


Assessment: Practicals and assignments: 40%; examination: 60%.
RBF3630 ENVIRONMENTAL IMPACTS AND MONITORING

Locations: To be advised., St. Albans (offered subject to minimum enrolments in 2004)

Pre-requisites: RBF1310 Biology 1, RBF1320 Biology 2

Descriptions: This subject aims to introduce students to the 'real world' application of ecological studies, especially in the process of sustainable development. Topics covered will include: Overview of Australian natural resources subject to environmental degradation (e.g. land, soil, water, biota); The social and industrial factors responsible for degradation (e.g. erosion, water pollution, salinisation, habitat destruction, exotic species, extraction, biodiversity loss etc); The Environmental Impact Assessment process used to quantify impacts (e.g. role of consultants, the EEI process itself); Approaches to monitoring environmental degradation and recovery (e.g. sampling design, monitoring procedures, rapid assessment protocols, ANZECC guidelines); Mechanisms and approaches available to minimise impacts (reserve systems, limits of acceptable change technologies, financial tools, role of government departments). Particular emphasis is given to 'hands on' experience.

Credit Points: 12

Learning Outcomes: To be advised.

Class Contact: four hours per week, comprising 1 x two hr lecture, 1 x two hr interactive tutorial/directed learning session (including group presentations).


Assessment: Within-semester (on-going) assessment at Weeks 6 and 13 (60 %) plus one case study report or project (40 %, including group presentation).

RBF3640 TERRESTRIAL ENVIRONMENTS AND REHABILITATION

Locations: To be advised., St. Albans (offered subject to minimum enrolments in 2004)

Pre-requisites: RBF1310 Biology 1, RBF1320 Biology 2, RBF2610 Fundamentals of Ecology, or at the discretion of the subject co-ordinator.

Descriptions: The major types of ecosystems, including forests, woodlands, grasslands, tundra and desert. The biological limits and adaptations of the organisms contained in these ecosystems and key ecological relationships between organisms. Case studies of rehabilitation of several of these ecosystems, including approaches based on an understanding of biology and ecology. Practical experience in rehabilitation projects.

Credit Points: 12

Learning Outcomes: To be advised.

Class Contact: Four hours per week in total, timetabled as a block, and consisting of a mix of lectures, tutorials, practical workshops and site visits, including discussions with those currently employed in the field.


Assessment: Final examination: 50 %; Report on field monitoring projects: 20 %; Workshop and practical reports: 30 %.

RBF3650 POLLUTION BIOLOGY

Locations: To be advised., St. Albans (this subject will first run in 2006)

Pre-requisites: RBF2610 Fundamentals of Ecology, RBF1310 Biology 1, RBF1320 Biology 2, Biometrics RBF3610, or subject co-ordinators discretion.

Descriptions: This subject aims to introduce students to the impact of pollutants on natural ecosystems. Topics covered include: Principles and concepts which apply to the analysis and evaluation of pollutant impacts on the natural environment. Experimental methodology employed in the evaluation of organism and ecosystem responses to pollutant exposure with special emphasis on statistical procedures which can be employed in evaluating impacts. Types of and significance of different groups of pollutants. Tolerance and susceptibility of organisms and biological systems to pollutants; pollution monitoring, biological indicators of pollution induced environmental stress; sequestration of exogenous compounds; partitioning; sources and environmental transport; uptake and depuration; case studies.

Credit Points: 12

Learning Outcomes: To be advised.

Class Contact: Four hours per week for one semester, comprising two hours of lectures and two hours of practical.

Required Reading: To be advised.

Assessment: Practicals and assignments: 40 %; examination: 60 %.

RBF3660 INDIGENOUS SOCIETY AND ENVIRONMENTAL MANAGEMENT

Locations: St Albans, Werribee,

Pre-requisites: Nil


Credit Points: 12

Learning Outcomes: On successful completion of this unit, students are expected to be able to:

- Discuss the relevance of indigenous perspectives to contemporary environmental issues in Australia;
- Summarise and analyse articles with a broad indigenous focus, including history, bush tucker, education, health, reconciliation, land use practices, heritage and spiritual issues;
- Engage meaningfully with guest speakers by attending prior readings.

Class Contact: Four (4) hours per week


Assessment: Indigenous folder (20%); case study/ video/ art work/ story/ photo essay (60%); evidence of prior reading of weekly material (20%).

RBF3730 FOOD MICROBIOLOGY

Locations: Werribee,

Pre-requisites: To be advised.

Descriptions: The aim of this subject is to develop and increase the student’s knowledge and skills in microbiology with particular reference to the role of micro-organisms in food processing, food spoilage and food-borne disease. Topics include: characteristics of major groups of micro-organisms of importance in foods; ecology of food spoilage. Microbial growth in foods; microbial fermentation and fermented products; biomass; waste treatment; food-borne infections and food poisoning; control and prevention of food-borne disease; hygiene and sanitation; mycotoxins; legislation and standards will be covered.

Credit Points: 12

Learning Outcomes: To be advised.
Class Contact: Six hours per week for one semester comprising lectures, tutorials and practical work.


Assessment: Assignments, 15%; practical work, 25%; final examination, 60%.

RBF3810 NUTRIENT AND DRUG INTERACTION

Locations: Werribee,

Pre-requisites: RBF 2550 Nutrition, SBM 2260 Diet and Nutrition or equivalent, SNH2110 Disease and Health.


Credit Points: 12

Learning Outcomes: To be advised.

Class Contact: Three hours per week for one semester comprising lectures and tutorials.


Assessment: Assignments 40%, final examination 60%.

RBF3900 PROJECT

Locations: Werribee,

Pre-requisites: Students would normally be expected to have successfully completed all Year 1 and 2 subjects of SNH.

Descriptions: The subject aims to enable students to become competent in applying research methodology to a specific problem and to enable them to develop an area of personal interest relevant to their degree specialisation. This subject covers project methodology, experimental design and analysis, and research plan preparation. The project will be, as far as is possible, concerned with a real problem and will require the presentation of an oral and written report and may form all or part of a research publication. The project will be chosen by the student in consultation with staff members.

Credit Points: 12

Learning Outcomes: To be advised.

Class Contact: Eight hours per week for one semester comprising lectures, tutorials and practical work.

Required Reading: There are no prescribed texts for this subject.

Assessment: A choice of research project will be made halfway through semester five and an assignment concerned with establishing the methodology for this project will be assessed and will contribute 20% to the overall assessment of the project. The written project will contribute 60% and the oral presentation will contribute 20% to the overall assessment.

RBF4001 SCIENCE HONOURS

Locations: Werribee,

Pre-requisites: Satisfactory completion of an undergraduate degree program with a credit average in the final year.

Descriptions: The program will consist of a research project and a coursework component. The major focus of the course component is research methodology and subjects include experimental design, statistics in research, data analysis, computer applications and software, literature analysis and critical appraisal, ethics in research, scientific writing and data presentation. The research project will be undertaken in one of the research areas of the School and may, subject to approval, be undertaken at an external location. Required Reading To be advised by the lecturer.

Credit Points: 48

Learning Outcomes: To be advised.

Class Contact: An average of 20 hours per week for one semester.

Required Reading: To be advised by the lecturer.

Assessment: The nature of the coursework assessment will vary and may be based on written assignments, seminar presentations and a written examination. The research project assessment will consist of an oral presentation and submission of a thesis.

RBF4002 SCIENCE HONOURS

Locations: Werribee,

Pre-requisites: RBF4001 - SCIENCE HONOURS

Descriptions: This subject, the aim of which is to enable students to competently research an area of study utilising knowledge and skills gained in previous studies, consists of a project carried out by students on an individual basis. The project is expected to be a scientific investigation of an approved topic, followed by the submission of a suitably formatted thesis in which the topic is introduced and formulated; the scientific investigation described in detail; results and conclusions from the study are elaborated; and an extended discussion presented. The research project will be undertaken in one of the research areas of the School and may, subject to approval, be undertaken at an external location.

Credit Points: 48

Learning Outcomes: To be advised

Class Contact: An average of 30 hours per week for one semester.

Required Reading: To be advised by the lecturer.

Assessment: The nature of the coursework assessment will vary and may be based on written assignments, seminar presentations and a written examination. The research project assessment will consist of an oral presentation and submission of a thesis.

RBF5110 FUNDAMENTALS OF FOOD MICROBIOLOGY

Locations: Werribee,

Pre-requisites: A completion of an undergraduate science degree or other relevant related disciplines.

Descriptions: This unit provides an introduction to food microbiology with particular reference to the role of microorganisms in food processing, food spoilage and food borne disease. The unit includes: Ecology, biochemistry, isolation, enumeration and identification of bacteria, yeasts and fungi associated with foods and beverages. Microbial food spoilage and its control: ecology of food spoilage, characteristics of major spoilage organisms, spoilage control Food borne infections and food poisoning: microbiology of common food-borne pathogenic bacteria, their detection and enumeration, Indicator organisms. Control and prevention of food borne disease. Mycotoxins. Hygiene and sanitation. Microbial fermentations: biochemistry

Credit Points: 48

Learning Outcomes: To be advised

Class Contact: An average of 20 hours per week for one semester.

Required Reading: To be advised by the lecturer.

Assessment: The nature of the coursework assessment will vary and may be based on written assignments, seminar presentations and a written examination. The research project assessment will consist of an oral presentation and submission of a thesis.
of fermentation, food preservation by fermentation, fermented products. Waste
treatment. Introduction to biotechnology and its applications in food production
and processing. Microbiological examination of foods and microbiological quality
control: sample preparation and plans, sub-lethal injury, standard and rapid methods,
specifications, HACCP concept.

Credit Points: 12

Learning Outcomes: On successful completion of this unit, students are expected to:

- generalise concepts related to microbial ecology of food,
- to apply methods to control the growth of spoilage and eliminate pathogenic
  microorganisms in food to minimize the risks associated with the presence
  of spoilage microorganisms in foods and alleviated occurrence of foodborne
diseases of public significance,
- to appraise the microbial ecology of different food groups, to consider
  microorganisms used in the production of contemporary and functional foods,
  and design and develop best practices of storing handling and distribution of
  food.

Class Contact: The equivalent of 72 hours for one semester or 6 hrs per week
comprising of 3 hrs of lecture and 3 hrs of tutorial/practice.

Microbiology. Springer Publishers:New York, NY

Assessment: Assignment (oral presentation and written report, 3000 words) and
tests - 40%; Practical work - 20%; final examination (3 hrs written exam) 40%

RBF5210 FUNDAMENTALS OF PRESERVATION AND PROCESSING
TECHNOLOGIES

Locations: Werribee,

Pre-requisites: A completion of an undergraduate science degree or other relevant
related disciplines.

Descriptions: This unit provides an introduction to the principles and technology
of food processing and preservation through traditional and modern techniques and
their effects on the safety, appearance and nutritional quality of foods and the
implications of processing and preservation methodologies on the physical, chemical,
microbiological and nutritional quality of foods. This unit covers: A brief history of
the food processing industry. A basic introduction to unit operations. Preservation
by moisture control: water activity, intermediate moisture foods, concentration,
dehydration and freeze drying. Preservation by heat treatment: pasteurisation,
sterilisation, canning. Preservation by chilling and freezing. Chemical preservation
and fermentation. Preservation by irradiation. Modified atmospheres. Influence of
processing on product safety, quality and nutritional value of foods. Principles of food
packaging, packaging requirements.

Credit Points: 12

Learning Outcomes: On successful completion of this unit, students are expected to
be able to appraise unit operations and equipment used in food processing with
respect to their function and effects on food materials; to apply the mechanisms
underlying short and long term food preservation and predict the effects these
processes on the food quality and safety and to design and establish process flow
diagrams and calculate heat and mass balances.

Class Contact: Total of 72 hrs per semester or six hours per week comprising
lectures, tutorials, practical work and/or field trips for one semester.

Victoria University, Faculty of Health, Engineering and Science.

Assessment: Assignments and tests 40%, practical work 20%, final examination
40%.

RBF5220 FUNDAMENTALS OF FOOD ANALYSIS

Locations: Werribee,

Pre-requisites: A completion of an undergraduate science degree or other relevant
related disciplines.

Descriptions: This unit provides an introduction to the laboratory analysis of the
chemical, physical and biochemical properties of foods and food components. The
unit covers: the reasons for analysing foods; food composition tables and databases;
sampling and sample preparation; the proximate analysis system; water activity;
analyses of proteins, carbohydrates, lipids, vitamins, minerals and pigments; the use
of enzyme based assays for food components; rheology, texture, viscosity and colour
of foods - principles and recent developments in analysis; enzymes as processing aids
and as deteriorative agents - measurement of food enzymes.

Credit Points: 12

Learning Outcomes: On successful completion of this unit, students are anticipated to
be able to discuss and evaluate the principles of and procedures for the food
analysis and labeling; to compare and assess different methods used in food
analysis of foods, distinguishing between methods used for quality control and rapid
screening techniques in comparison to official methods; to estimate accuracy and
reproducibility in analysis and to propose, design and establish novel methods of
food analysis.

Class Contact: The equivalent of 60 hours or five hours per week comprising two
hours of lectures/tutorials and three hours of practical laboratory work for one
semester.

Gaithersburg, MD : Aspen Publishers.

Assessment: Assignments and tests 40%, practical work 30%, final examination
30%.

RBF6110 MAJOR PROJECT IN FOOD SCIENCE AND TECHNOLOGY 1

Locations: Werribee,

Pre-requisites: A completion of an undergraduate science degree or other relevant
related disciplines.

Descriptions: In this unit students will conduct a research project of their own
design, analyse and interpret data and communicate research findings clearly
and concisely in both oral and written form. The project will be carried out on an
individual basis under the supervision of a relevant staff member and a member
of industry where appropriate. The unit involves: Conduct of a thorough literature
search on current issues in food science and technology; Design and development
of the study; Presentation of a seminar on the research work. Unit to approval, the
project may be related to the student’s work situation and/or may involve laboratory
or plant based work.

Credit Points: 24

Learning Outcomes: On successful completion of this unit, students are expected to
be able to critically evaluate scientific literature, to assess problems and design
experiments to test hypotheses, to analyse and solve problems, to apply knowledge
to new problems, and to plan, design, conduct and report on an individual research
project.

Class Contact: The equivalent of minimum 144 hrs per semester or at least 12 hrs
per week of laboratory/tutorial work for one semester.

Required Reading: Students will be responsible for reviewing the current literature
on their project topic.

Assessment: Presentation (15+5 min, Powerpoint) 20%, Written report (max 5000
words) 80%
FACULTY OF HEALTH, ENGINEERING AND SCIENCE

RBF6120 FRUIT AND VEGETABLE SCIENCE AND TECHNOLOGY

Locations: Werribee,

Pre-requisites: A completion of an undergraduate science degree or other relevant related disciplines.

Descriptions: This unit introduces students to the principles and technology of fruit and vegetable processing and to recent developments in the processing of these commodities. Topics covered include: The fruit and vegetable industry: plant physiology; the biochemistry of fruit ripening; diseases; maturity prediction and testing; post-harvest handling and storage, chilling and freezing, canning, microwave processing, cooking and dehydration; changes in quality. The juicing of fruit and vegetables, product deteoration, Blanching treatments, product quality, quality assurance, and legal requirements.

Credit Points: 12

Learning Outcomes: On successful completion of this unit, students are expected to be able to critically appraise the relationship between properties of raw materials with quality of stored fresh and processed fruit and vegetable products; to predict physicochemical changes that take place during storage and processing of various fruit and vegetable products including reproduction of flow diagrams and identification of the critical control points; to operate selected processing equipment at a pilot plant scale; to implement GMP in production of selected fruit and vegetable products.

Class Contact: The equivalent of 72 hrs per semester or six hours per week comprising lectures, tutorials, practical work and/or field trips for one semester.


Assessment: Assignments and tests 30%, practical work 20%, final examination 50%

RBF6130 GRAIN SCIENCE AND TECHNOLOGY

Locations: Werribee,

Pre-requisites: A completion of an undergraduate science degree or other relevant related disciplines.

Descriptions: This unit will provide students with an understanding of the principles and practices involved in the technology of food cereals and legumes. Topics covered include: Cereal and legumes of the world - nutritional, physical, compositional and biochemical characteristics. The characteristics of grain proteins and starches; protein functionality; the starch granule. The milling of cereals and legumes - cleaning, conditioning, the concept of starch damage and the control of mill product quality. Flour quality, analytical approaches, quality control, grain sprouting and end use suitability. Dough development. The technology of baking, ingredients used and their functional properties. International breadmaking processes and equipment. Storage, packaging and staling of cereal products. The preparation of flat breads, traditional Asian noodles and steamed breads and other Asian grain based products. The technology of breakfast cereals including enrichment. The processing of starch, traditional Asian noodles and steamed breads and other Asian grain based products. The technology of baking, ingredients used and their functional properties. International breadmaking processes and equipment. Storage, packaging and staling of cereal products. The preparation of flat breads, traditional Asian noodles and steamed breads and other Asian grain based products. The technology of breakfast cereals including enrichment. The processing of starch, traditional Asian noodles and steamed breads and other Asian grain based products. The technology of baking, ingredients used and their functional properties. International breadmaking processes and equipment. Storage, packaging and staling of cereal products. The preparation of flat breads, traditional Asian noodles and steamed breads and other Asian grain based products. The technology of breakfast cereals including enrichment. The processing of starch, traditional Asian noodles and steamed breads and other Asian grain based products. The technology of baking, ingredients used and their functional properties. International breadmaking processes and equipment. Storage, packaging and staling of cereal products. The preparation of flat breads, traditional Asian noodles and steamed breads and other Asian grain based products. The technology of breakfast cereals including enrichment. The processing of starch, traditional Asian noodles and steamed breads and other Asian grain based products. The technology of baking, ingredients used and their functional properties. International breadmaking processes and equipment. Storage, packaging and staling of cereal products. The preparation of flat breads, traditional Asian noodles and steamed breads and other Asian grain based products. The technology of breakfast cereals including enrichment. The processing of starch, traditional Asian noodles and steamed breads and other Asian grain based products. The technology of baking, ingredients used and their functional properties. International breadmaking processes and equipment. Storage, packaging and staling of cereal products. The preparation of flat breads, traditional Asian noodles and steamed breads and other Asian grain based products. The technology of breakfast cereals including enrichment. The processing of starch, traditional Asian noodles and steamed breads and other Asian grain based products. The technology of baking, ingredients used and their functional properties. International breadmaking processes and equipment. Storage, packaging and staling of cereal products. The preparation of flat breads, traditional Asian noodles and steamed breads and other Asian grain based products. The technology of breakfast cereals including enrichment. The processing of starch, traditional Asian noodles and steamed breads and other Asian grain based products. The technology of baking, ingredients used and their functional properties. International breadmaking processes and equipment. Storage, packaging and staling of cereal products. The preparation of flat breads, traditional Asian noodles and steamed breads and other Asian grain based products. The technology of breakfast cereals including enrichment. The processing of starch, traditional Asian noodles and steamed breads and other Asian grain based products. The technology of baking, ingredients used and their functional properties. International breadmaking processes and equipment. Storage, packaging and staling of cereal products. The preparation of flat breads, traditional Asian noodles and steamed breads and other Asian grain based products.

Credit Points: 12

Learning Outcomes: On successful completion of this unit, students are expected to be able to critically appraise the relationship between properties of raw materials with quality of stored fresh and processed fruit and vegetable products; to predict physicochemical changes that take place during storage and processing of various fruit and vegetable products including reproduction of flow diagrams and identification of the critical control points; to operate selected processing equipment at a pilot plant scale; to implement GMP in production of selected fruit and vegetable products.

Class Contact: The equivalent of 72 hrs per semester or six hours per week comprising lectures, tutorials, practical work and/or field trips for one semester.


Assessment: Assignments and tests 30%, practical work 20%, final examination 50%

RBF6210 MAJOR PROJECT IN FOOD SCIENCE AND TECHNOLOGY - 2

Locations: Werribee,

Pre-requisites: A completion of an undergraduate science degree or other relevant related disciplines.

Descriptions: In this unit students will conduct a research project of their own design, analyse and interpret data and communicate research findings clearly and concisely in both oral and written form. The project will be carried out on an individual basis under the supervision of a relevant staff member and a member of industry where appropriate. The unit involves: Conduct of a thorough literature search on current issues in food science and technology; Design and development of the study; Presentation of a seminar on the research work. Unit to approval, the project may be related to the student’s work situation and/or may involve laboratory or plant based work.

Credit Points: 24

Learning Outcomes: On successful completion of this unit, students are expected to be able to critically evaluate scientific literature, to assess problems and design experiments to test hypotheses, to analyze and solve problems, to apply knowledge to new problems, and to plan, design, conduct and report on an individual research project.

Class Contact: The equivalent of minimum 144 hrs per semester or at least 12 hrs per week of laboratory/tutorial work for one semester

Required Reading: Students will be responsible for reviewing the current literature on their project topic.

Assessment: Presentation (15+5 min, Powerpoint) 20%, Written report (max 5000 words) 80%.

RBF6220 DAIRY SCIENCE AND TECHNOLOGY

Locations: Werribee,

Pre-requisites: A completion of an undergraduate science degree or other relevant related disciplines.

Descriptions: This unit provides a study of the science and technology associated with the processing of milk and milk products. The unit covers: Structure of the Dairy Industry; Effects of heat treatment on milk; Processing of milk to various dairy products: Advances in testing of milk and milk products; Quality management of milk and dairy products; Starter cultures and friendly bacteria; Advances in dairy fermentation; UHT of milk and milk products; Membrane technology; Nutritional issues in dairy product development; Dairy ingredients.

Credit Points: 12

Learning Outcomes: On successful completion of this unit, students are anticipated to be able to critically appraise the relationship between properties of raw materials with the quality of processed dairy products; to predict physicochemical changes that take place during processing of various dairy products including reproduction of flow diagrams and identification of the critical control points; to operate selected processing equipment at a pilot plant scale; to implement GMP in production of selected dairy products.

Class Contact: The equivalent of 60 hrs per semester or five hours per week comprising lectures, tutorials, practical work and/or field trips for one semester.


Assessment: Assignments and tests 40%, practical work 20%, final examination 40%.
RBF6320 SPECIAL TOPICS IN FOOD SCIENCE AND TECHNOLOGY

**Locations:** Werribee,

**Pre-requisites:** A completion of an undergraduate science degree or other relevant related disciplines.

**Descriptions:** This unit allows students to develop and study a selected aspect of food science and technology and requires the conduct of a project on the selected topic. This project is not laboratory based but is designed to allow students to research the literature on a topic of interest to themselves. The work will be carried out on an individual basis under the supervision of a relevant staff member. The unit includes: assessment of current issues relevant to the field; generation of a research question; critical evaluation of current knowledge relevant to developed research question; public delivery of collected information and submission of a written report. Subject to approval, the project may be related to the students’ work situation and/or may involve plant based work.

**Credit Points:** 12

**Learning Outcomes:** On successful completion of this unit, students are expected to be able to critically evaluate scientific literature, to assess problems and design research question, to analyze and solve problems, to apply knowledge to new problems, and plan, conduct and report on an individual research project.

**Class Contact:** The equivalent of 36 hrs per semester or 3 hrs per week comprising tutorial work and self-directed learning activities for one semester.

**Required Reading:** Students will be responsible for reviewing the current literature on their project topic.

**Assessment:** Presentation (15±5 min, Powerpoint) 20%, Written report (max 3500 words) 80%.

RBF6330 INDUSTRY BASED TRAINING

**Locations:** Werribee,

**Pre-requisites:** A completion of an undergraduate science degree or other relevant related disciplines.

**Descriptions:** The unit will be based on a project agreed upon by an industry partner and a supervisor from the School of Molecular Sciences. An example of project will include impact of various types of starter cultures on acidity and resulting shelf life of yoghurt. Such type of project is proposed to be carried out at Nestle Dairy. Another example will include impact of exo-polysaccharide production on sensory properties of dairy foods. This type of project is suited for National Foods. The unit will be based on a project agreed upon by an industry partner and a supervisor from the School of Molecular Sciences. An example of project will include impact of various types of starter cultures on acidity and resulting shelf life of yoghurt. Such type of project is proposed to be carried out at Nestle Dairy. Another example will include impact of exo-polysaccharide production on sensory properties of dairy foods. This type of project is suited for National Foods.

**Credit Points:** 12

**Learning Outcomes:** On successful completion of this unit, students are expected to be able to critically evaluate scientific literature, assess problems and design experiments to test hypotheses, analyse and solve problems, apply knowledge to new problems, and plan, conduct and report on an individual research project and to perform appropriately in an industrial setting.

**Class Contact:** The equivalent of minimum 72 hours per semester or at least 6 hrs per week of laboratory/tutorial work for one semester, subject to availability and approval by the course coordinator.

**Required Reading:** The required reading will depend upon the type and nature of project students are undertaking. The names of text books will be provided depending on the type of work students are doing.

**Assessment:** Presentation (15±5 min, Powerpoint) 20%, Written report (max 3500 words) 80%.

RBF8001 RESEARCH THESIS 1 FULL TIME

**Locations:** To be advised.,

**Pre-requisites:** To be advised.

**Descriptions:** This unit of study is part of a research degree program. Information on research topics for the Faculty of Health, Engineering and Science may be found on the faculty website at the following link: http://www.vu.edu.au/Faculties/HealthEngineeringandScience/ResearchandResearchTraining/MajorResearchAreas/Assessment criteria and Core Research Graduate Attributes can be found on the Office for Postgraduate Research website at the following link: http://www.vu.edu.au/Research/OfficeforPostgraduateResearch/PolicyProcessesandGuidelines/

**Credit Points:** 48

**Learning Outcomes:** To be advised.

**Class Contact:** To be advised.

**Required Reading:** To be advised.

**Assessment:** To be advised.

RBF8002 RESEARCH THESIS 2 FULL TIME

**Locations:** To be advised.,

**Pre-requisites:** To be advised.

**Descriptions:** To be advised.

**Credit Points:** 48

**Learning Outcomes:** To be advised.

**Class Contact:** To be advised.

**Required Reading:** To be advised.

**Assessment:** To be advised.

RBF8011 RESEARCH THESIS 1 PART TIME

**Locations:** To be advised.,

**Pre-requisites:** To be advised.

**Descriptions:** This unit of study is part of a research degree program. Information on research topics for the Faculty of Health, Engineering and Science may be found on the faculty website at the following link: http://www.vu.edu.au/Faculties/HealthEngineeringandScience/ResearchandResearchTraining/MajorResearchAreas/Assessment criteria and Core Research Graduate Attributes can be found on the Office for Postgraduate Research website at the following link: http://www.vu.edu.au/Research/OfficeforPostgraduateResearch/PolicyProcessesandGuidelines/

**Credit Points:** 24

**Learning Outcomes:** To be advised.

**Class Contact:** To be advised.

**Required Reading:** To be advised.

**Assessment:** To be advised.

RBF8012 RESEARCH THESIS 2 PART TIME

**Locations:** To be advised.,

**Pre-requisites:** To be advised.

**Descriptions:** This unit of study is part of a research degree program. Information on research topics for the Faculty of Health, Engineering and Science may be found on the faculty website at the following link: http://www.vu.edu.au/Faculties/HealthEngineeringandScience/ResearchandResearchTraining/MajorResearchAreas/Assessment criteria and Core Research Graduate Attributes can be found on the Office for Postgraduate Research website at the following link: http://www.vu.edu.au/Research/OfficeforPostgraduateResearch/PolicyProcessesandGuidelines/
Credit Points: 24
Learning Outcomes: To be advised.
Class Contact: To be advised.
Required Reading: To be advised.
Assessment: To be advised.

RBM1061 SAFETY 1
Locations: St Albans, Internet
Pre-requisites: Nil
Descriptions: This unit gives a course overview to outline the knowledge, skills and abilities that are acquired by occupational health and safety persons through workplace experiences and how occupational health and safety is affiliated with many disciplines such as law, occupational hygiene, toxicology, ergonomics, organisational behaviour. The nature of safety in various occupational fields will be examined in the contexts of both historical and current developments. This unit will introduce the student to the classification of hazards that will be linked with more foundation science topics to elaborate on the of sources of energy in various environments which cause harm to people and property. Ways to control and reduce or prevent exposure to these hazards will also be described through safety standards, guidelines, codes of practice and regulations. Protection and emergency procedures will also be covered as part of this unit.
Credit Points: 12
Learning Outcomes: On successful completion of this unit, students are expected to be able to recognise the fundamental concepts used in safety programs, hazard identification and occupational health and safety management. Students will recognise the scientific concepts that relate to mechanical, physical, chemical and biological hazards and access information from safety standards, guidelines, codes of practice and regulations on these hazards.
Class Contact: Two, two hour lecture periods per semester week. The first two hour lecture will cover the fundamentals of safety and the second will describe scientific principles of mechanical, physical, chemical and biological hazards. Further class contact will include one hour tutorial each week over the semester.
Assessment: Topic Questions 30%, Practical reports and written assignments 40%, Tutorial participation 15%, Three tests 15%. Short answer and multiple-choice questions.

RBM1101 BIOSCIENCE 1
Locations: St Albans, Internet
Pre-requisites: Nil
Descriptions: This unit will contain:
- Organisation of the human body
- Introduction to the human body
- The chemical level of organisation
- The cellular level of organisation
- The tissue level of organisation
- The principals of support and movement
- The skeletal system
- bone tissue, the axial skeleton, and the appendicular skeleton
- Joints
- Muscle tissue
- Muscular system
- Control systems of the human body:
  - Nervous tissue
  - Spinal cord and spinal nerves
  - The brain and cranial nerves sensory, motor and integrative systems
  - The special sensors
  - The autonomic nervous system
  - The endocrine system
  - Maintenance of the human body
  - The cardiovascular system:
    - The blood, the heart and blood vessels and hemodynamics
    - The lymphatic and immune system and resistance to disease

Credit Points: 12
Learning Outcomes: On successful completion of this unit, the student will:
- explain, using examples, the structure and function of bones, joints, muscles, arteries, veins, lymphatics and nerves.
- understand the anatomy and histology of the structures of the thorax
- understand the anatomy and histology of the structures of the abdomen
- understand the anatomy and histology of the structures of the pelvis and perineum
- problem solve common clinical problems, such as heart attack, diabetes, appendicitis, labour and delivery.

Class Contact: Five hours per week, 3h lectures, 2h tutorial/practical
Assessment: Topic Test x 2, 10%; Practical exam, 45%; Theory exam, 45%.

RBM1100 FUNCTIONAL ANATOMY OF THE TRUNK
Locations: St Albans,
Pre-requisites: To be advised.
Descriptions: This unit of study introduces students to functional anatomy. After a brief introduction to bones, joints, muscles, vessels and nerves; students study gross, histological and some surface anatomy of the thorax, abdomen and pelvis. The following regions are studied: thoracic cage, pleura and lungs, heart, mediastinal structures, abdominal wall, pelvic girdle, gastrointestinal organs, urinary organs and reproductive organs. The relevance of functional anatomy to health and healing will be highlighted. Topics studied in this unit of study may be interchanged with those in other Functional Anatomy units.
Credit Points: 12
Learning Outcomes: On successful completion of this unit students should be able to:
- understand the anatomy and histology of the structures of the thorax
- understand the anatomy and histology of the structures of the abdomen
- understand the anatomy and histology of the structures of the pelvis and perineum
- problem solve common clinical problems, such as heart attack, diabetes, appendicitis, labour and delivery.
On successful completion of this unit, students are expected to:

- have a sound understanding of major pathophysiological processes within each system listed above.

Class Contact: Forty eight hours (48) over one 12-week semester, comprising of three (3) hours per week delivered as lectures and one (1) hour per week practical class delivered as laboratory or tutorial.

Required Reading: Marieb, E.N. and Hoehn, K. 2007, Human Anatomy and Physiology, 7th edition, Pearson Benjamin Cummings; California, USA.

Assessment: This unit has three (3) assessment items, a one (1) hour written mid semester examination 25% (P1, W1, W2), four (4) laboratory reports 25% (P1, A1, C1, C2), and a three (3) hour written end of semester examination 50% (W1, W2, P1). To obtain a pass in this unit all components of assessment must be attempted and an aggregate mark of 50% must be attained.

RBM1102 BIOSCIENCE 1: HUMAN BODY STRUCTURE AND FUNCTION

Locations: St Albans,

Pre-requisites: Nil.

Descriptions: In this unit, human anatomy and physiology will be introduced and placed in context with nursing in an integrated fashion. The subject begins with an overview of the organisation of the human body. Basic concepts in chemistry and biochemistry are presented as essential background for understanding pharmacology and the structure and function of cells and tissues. Students are introduced to microbiology and the importance of infection control. After these fundamental concepts have been covered, students will study the structure and function of the skeletal and muscular systems, the nervous system, and the endocrine system.

Credit Points: 12

Learning Outcomes: On successful completion of this unit, students are expected to be able to:

- use appropriate anatomical terminology;
- understand basic principles of chemistry and biochemistry;
- describe the structure of the cell and understand cell function;
- describe the structure, function and location of epithelial and connective tissues;
- describe the structure, function and importance of the integumentary system;
- understand the fundamentals of microbiology and infection control;
- appreciate the relevance of microbiology in the work of health professionals;
- describe the basic anatomy of the central and peripheral nervous systems;
- understand basic principles of neurophysiology;
- describe the structure of various bones, joints, and muscles;
- understand the major functions of bone, joints, and muscles; and
- describe how physiological homeostasis is maintained and understand the role of the neuro-endocrine system in regulating body functions.

Class Contact: A total of 60 hours for the semester, or 5 hrs class contact per week comprising 2 hrs lecture, 1 hr tutorial and 2 hrs practical, or equivalent.


Assessment: 1. Test (10%) - Week 5 or 6 2. Test (10%) - Week 10 or 11 3. Practical examination (30%) Exam period 4. Written examination (2.5 hours) (50%) Exam period Students must achieve an aggregate score of 50% to pass this unit. Supplementary assessment in the form of a supplementary theory exam will normally be offered to students achieving an N (45-49%) grade where they have also scored at least 40% for the end of semester theory exam and have completed / submitted all other assessment tasks. Students must achieve at least 50% on the supplementary exam to be granted a P 50 as a final grade for the unit. Students who achieve a grade of 40 to 44% will be allocated L (not yet assessed) until after the supplementary exam period is over, when the grade will be converted to N (fail).

RBM1174 HUMAN PHYSIOLOGY

Locations: Footscray Park,

Pre-requisites: Nil.

Descriptions: Chemical bonding, water and buffers; structure-function relationships of macromolecules, including carbohydrates, proteins, lipids and nucleic acids; nutritional importance of essential amino acids and lipids; the role of biomolecules in transport around the body and the storage of energy; biomembranes; protein synthesis; major metabolic pathways.

Credit Points: 12

Learning Outcomes: On successful completion of this unit, students are expected to be able to:

- describe the basic chemistry of macronutrients;
- explain the relationship between structure and function of macromolecules;
- discuss the nutritional importance of essential amino acids and lipids;
- explain the transport and storage of energy in the human body;
- describe protein synthesis and the basic metabolic pathways of macromolecules.

Class Contact: Four hours per week for one semester comprising lectures and tutorials.


Assessment: Practical 20%; topic tests 20%; examination 60%
The relevance of functional anatomy to health and healing will be highlighted. Topics studied in this unit of study may be interchanged with those in other Functional Anatomy units.

Credit Points: 12

Learning Outcomes: At the completion of this unit students should be able to:

• understand the anatomy of the upper limb
• understand the anatomy of the lower limb
• problem solve common clinical problems, such as a dislocated shoulder or hip replacement surgery.

Class Contact: Five hours per week, 3 hours lectures, 2 hours tutorial/practicals.


Assessment: Written assignment 25%; Practical exam, 20%; Theory exam, 55%

RBM1203 BIOSCIENCE 2: HUMAN BODY STRUCTURE & FUNCTION

Locations: St Albans,

Pre-requisites: To be advised.

Descriptions: The aim of this unit is to build upon the anatomy and physiology introduced in Bioscience 1. The structure and function of the cardiovascular, respiratory, urinary, gastrointestinal, immune, and reproductive systems will be covered. The neuro-endocrine regulation of these systems will be presented to provide an understanding of how homeostatic mechanisms regulate variables such as blood pressure, blood gas status, acid-base balance, and fluid and electrolyte balance. Students will also be introduced to basic concepts of inheritance, nutrition, and metabolism.

Credit Points: 12

Learning Outcomes: On successful completion of this unit, students are expected to be able to:

• describe the composition of blood and understand the various functions of blood;
• understand the role of erythrocytes, thrombocytes, and leukocytes;
• describe the structure of, and understand the function of the lymphatic system;
• describe the structure of the heart, and understand cardiac physiology;
• describe the anatomy of arteries, veins, and capillaries;
• understand how the cardiovascular system maintains homeostasis of blood pressure and blood flow;
• describe the anatomy of the respiratory system and understand the mechanics of breathing;
• understand how the respiratory system maintains homeostasis of blood gases and pH;
• describe the structure of the renal system;
• understand how the kidney maintains fluid & electrolyte balance;
• describe the anatomy of the organs comprising the digestive system and understand the function of each;
• describe the structure and understand the function of the male and female reproductive systems;
• understand the basic principles of human genetics; and
• understand basic metabolism and nutrition.

Class Contact: 5 hours per week; comprising of 2 hours of lectures, 2 hours of practical and 1 hour of tutorial or equivalent. Class contact hours per week may vary according to clinical placement allocations.


Assessment: 1. Test (10%) - Week 4 2. Test (10%) - Week 8 3. Practical examination (30%) Exam period 4. Written examination (2.5 hours) (50%) Exam period Students must achieve an aggregate score of 50% to pass this subject. Supplementary assessment in the form of a supplementary theory exam will normally be offered to students achieving an N (45-49%) grade where they have also scored at least 40% for the end of semester theory exam and have completed / submitted all other assessment tasks. Students must achieve at least 50% on the supplementary exam to be granted a P 50 as a final grade for the unit. Students who achieve a grade of 40 to 44% will be allocated L (not yet assessed) until after the supplementary exam period is over, when the grade will be converted to N (fail).

RBM1211 BIOSCIENCE 2

Locations: St Albans,

Pre-requisites: HFB1101 Bioscience 1

Descriptions: This unit will contain:

• Maintenance of the human body
• The respiratory system
• The digestive system
• Metabolism
• The urinary system
• Fluid, electrolyte and acid base homeostasis
• The reproductive systems
• Microbiology and infection control
• Fundamentals of microbiology
• Host microbe interactions
• Control of micro-organisms

Credit Points: 12

Learning Outcomes: On successful completion of this unit, the student will:

• Have a sound understanding of the anatomy and physiology of the respiratory system, the digestive system, metabolism, urinary system, and the reproductive systems.
• Have a sound understanding of major pathophysiological processes within each system listed above and their relationship to paramedic practice.

Class Contact: Forty eight hours (48) over one 12-week semester, comprising of three (3) hours per week delivered as lectures and one (1) hour per week practical class delivered as laboratory or tutorial.


Assessment: This unit has three (3) assessment items, a one (1) hour written mid semester examination 25%, four (4) laboratory reports 25%, and a two (2) hour written end of semester examination 50%. To obtain a pass in this unit all components of assessment must be attempted and passed. Failed assessments may be re-attempted/re-submitted once only. Maximum possible marks to be obtained on any re-submission will be 50%. This unit is hurdle requirement.
RBM1260 SAFETY 2

Locations: St Albans, Internet

Pre-requisites: Nil

Descriptions: This unit will cover theories of accident causation, describe the process of accident investigation, and control measures that should be introduced. Surveys, inspections, audits, accident and injury reporting, system safety, safety science, assessment of risk, management of risk and rehabilitation will be described and linked with discussion in the context of social, administrative and technical aspects of safety. How the person and their physical and social environment contribute toward the safety culture will also be described in this unit. This unit will also cover psychological hazards.

Credit Points: 12

Learning Outcomes: On successful completion of this unit, students are expected to be able to recognise models of theories of accident causation as well as models and systems of accident control. They should be able to report, analyse and report on accidents and implement safety policies and programs. Also after completing this unit students should be able to follow the compensation and rehabilitative processes that are set after stressors cause workplace injury which then require programs for the injured worker to ensure that there is opportunity for them to return to work.

Class Contact: A two-hour lecture delivered each semester week will cover the fundamentals of risk assessment and management and workplace requirements for compensation and rehabilitation. In addition there will be a one-hour lecture to cover theories of accident causation, and investigation, and analysis and reporting of accidents. Further class contact will include one hour tutorial every week of the semester.


Assessment: Tests 30%, Three Essays 35%, Assignment workplace analysis 12.5%, Assignment safety systems 12.5%, Tutorial participation 10%

RBM1501 FOUNDATIONS IN BIOMEDICAL SCIENCE A

Locations: St Albans,

Pre-requisites: Nil.

Descriptions: This unit has been designed to provide students with the fundamental skills necessary for the successful completion of the biomedical sciences course. A series of lectures and workshops will provide students with an introduction to communication theory and professional practice. This will cover communication skills of summarising, synthesising, note taking, laboratory report and essay writing, researching and referencing. Students will be encouraged to develop critical thinking and self editing skills. Oral presentation techniques such as debating, formal talks, impromptu presentations and small group presentations will be developed. Students will be encouraged to focus on the holistic nature of the communication process. During laboratory classes students will gain an understanding of the scientific method and will become familiar with some career options in the biomedical sciences. Students will also be encouraged to develop learning strategies for the successful completion of biomedical science subjects. An important outcome of the laboratory component is that students develop fundamental laboratory and problem solving skills.

Credit Points: 12

Learning Outcomes: At the successful completion of this unit, students should have:

- developed skills appropriate for employment applications
- broadened their horizons about the world of the professional scientist
- become familiar with the scientific method and the branch of science known as biomedical science
- become familiar with some potential career options in the field of biomedical science
- developed some learning strategies for the successful completion of biomedical science units
- become familiar with basic units of measurement used in the biomedical sciences
- developed fundamental laboratory skills
- developed skills in collecting and appropriately recording data
- developed skills in preparing a succinct laboratory report in scientific method format.

Class Contact: To be advised.

Required Reading: VU, Faculty of Arts, 2008, Handbook of communication skills for first year students in the Faculty of Health, Engineering and Science, 9th edn.

Assessment: 10%; Essay 15%; Debate 15%; Laboratory report 10%; Exam 50%.

RBM1502 FOUNDATIONS IN BIOMEDICAL SCIENCE B

Locations: St Albans,

Pre-requisites: Nil.

Descriptions: This unit of study enables students to acquire the skills and techniques required to critically analyse written material, particularly scientific reports and to analyse scientific data. Topics include: basic mathematical principles, scientific notation and SI units, biophysics, introduction to data; descriptive statistics; introduction to probability; normal distribution; the t statistic; hypotheses testing and ‘p’ values. Use will be made of statistical and other computer packages commonly used within biomedical sciences.

Credit Points: 12

Learning Outcomes: To be advised.

Class Contact: Five hours per week, 3h lectures, 2h practicals/workshops.

Required Reading: Strube P 2003 Bodyworkx, 2nd ed. Prentice Hall; Utts & Heckard 2004 Mind On Statistics, 2nd ed. Thomson; Handbook of biophysics and biostatistics for biomedical science students in the Faculty of Science, Engineering and Technology.

Assessment: Laboratory assessment tasks, 25%; Assignment, 25%; Biophysics test, 25%; Statistics test, 25%.

RBM1510 HUMAN BIOSCIENCE 1A - PSYCHOLOGY

Locations: St Albans,

Pre-requisites: Nil.

Descriptions: This unit provides a basic knowledge and understanding of human cells, tissues and organ systems. It also introduces chemical and physical principles and relates these principles to the human body. Concepts of physiological regulation and homeostasis are discussed and applied to functions of body systems. This subject provides an overview of the structure and function of the human body.

Credit Points: 24

Learning Outcomes: To be advised.

Class Contact: Seven hours per week comprising four hours lectures, three hours laboratory and/or tutorial.
FACULTY OF HEALTH, ENGINEERING AND SCIENCE

Required Reading: To be advised by lecturers.
Assessment: Tests and examinations, 55%; laboratory reports, laboratory tests and assignments, 45%.

RBM1514 FUNCTIONAL ANATOMY 1
Locations: St Albans,
Pre-requisites: Nil.
Descriptions: This unit of study introduces students to functional anatomy. After a brief introduction to bones, joints, muscles, vessels and nerves; students study gross, histological and some surface anatomy of the head and neck and the back. The following regions are studied: skull and cranial cavity, brain and the associated nervous system, scalp and face, eye and ear, nasal and oral cavities, major structures of the neck, vertebral column and deep and superficial muscles of the back. The relevance of functional anatomy to health and healing will be highlighted. Topics studied in this unit of study may be interchanged with those of the unit of study Functional Anatomy 2 and/or 3.
Credit Points: 12
Learning Outcomes: To be advised.
Class Contact: Five hours per week, 3h lectures, 2h practicals.
Assessment: Topic Test x 2, 10%; Practical exam, 35%; Theory exam, 55%.

RBM1515 ANATOMY AND PHYSIOLOGY 1
Locations: St Albans,
Pre-requisites: Nil.
Descriptions: The structure and function of the human body is introduced and placed in an integrated fashion within the context of midwifery. Following a brief overview of the organisation of the human body, students are introduced to the structure and function of cells and various types of tissues. Basic concepts in chemistry and biochemistry are covered in relation to the human body and students are introduced to microbiology within the context of infection control. The bones, joints and muscles of the body are taught in an integrated way using a regional approach. The nervous system and endocrine system are discussed to highlight their regulatory role for control, co-ordination and communication. The importance of homeostasis is continuously highlighted and the role of the neuro-endocrine system in maintaining equilibrium within the body is emphasised. This is followed by a discussion of the special senses, in particular sight, hearing and balance. The integumentary system is covered to emphasise the importance of, for example, skin colour, temperature and sensation. Students are also introduced to microbiology and the importance of infection control. An understanding of the various types of cells and their functions within the body. In this subject, Human Bioscience will be introduced and placed in context with nursing in an integrated fashion. Content will include a brief overview of the organization of the human body; students will be introduced to the structure and functions of cells and the various types of tissues in the body. Basic concepts in chemistry and biochemistry will be covered providing the groundwork to support an understanding of the various types of cells and their functions within the body. Students are also introduced to microbiology and the importance of infection control. The importance of homeostasis is continuously highlighted and the role of the neuro-endocrine system in maintaining equilibrium within the body is emphasised. This will be followed by discussions of other body systems emphasizing the relationship between structure and function and their relevance to Nursing.
Credit Points: 8
Learning Outcomes: On successful completion of this unit, students are expected to be able to:
- Outline the structures and functions of human cells and tissues;
- Explain the basic concepts of chemistry, biochemistry, microbiology and infection control in relation to the human body;
- Describe the structure of the integumentary, musculo-skeletal, endocrine and nervous systems;
- Explain homeostasis and the role of the neuro-endocrine system in regulating body functions.
Class Contact: Four hours per week for one semester comprising lectures, tutorials and laboratory work.

RBM1519 HUMAN BIOSCIENCE 1: BODY STRUCTURE & FUNCTION
Locations: St Albans,
Pre-requisites: Nil.
Descriptions: In this subject, Human Bioscience will be introduced and placed in context with nursing in an integrated fashion. Content will include a brief overview of the organization of the human body; students will be introduced to the structure and functions of cells and the various types of tissues in the body. Basic concepts in chemistry and biochemistry will be covered providing the groundwork to support an understanding of the various types of cells and their functions within the body. Students are also introduced to microbiology and the importance of infection control. The importance of homeostasis is continuously highlighted and the role of the neuro-endocrine system in maintaining equilibrium within the body is emphasised. This will be followed by discussions of other body systems emphasizing the relationship between structure and function and their relevance to Nursing.
Credit Points: 8
Learning Outcomes: To be advised.
Class Contact: A total of 48 hours, comprising lectures, tutorials and practicals.
Assessment: Practical assignments and test 50%, theory test and examination 50%.

RBM1518 HUMAN PHYSIOLOGY 1
Locations: St Albans,
Pre-requisites: Nil.
Descriptions: The importance of homeostasis and the role of the neuro-endocrine system in maintaining equilibrium within the body is emphasised. The nervous system and endocrine system are introduced in an integrated way to highlight their regulatory role for control, co-ordination and communication. The nervous system will be represented as the body's most rapid means of maintaining homeostasis via sensations, integration and response to changes, both within the body and in the outside environment. The physiology of nerve cells will be used to introduce bioelectrical concepts. This provides the groundwork to support an understanding of the various types of cells within the body and their functions. The musculoskeletal system and cellular replication processes are covered. Topics studied in this subject may be interchanged with those of RBM1528 Physiology 2.
Credit Points: 12
Learning Outcomes: To be advised.
Class Contact: Five hours per week for one semester, comprising three hours of lectures, two hours of practical on alternate weeks and one hour tutorial class per week.
Assessment: Practical reports/test and assignment/worksheets, 45%; test/examination, 55%.

Assessment: Test and assignment (20%); laboratory work/test (40%); theory examination (40%).
RBM1520 HUMAN BIOSCIENCE 2 - PSYCHOLOGY

Locations: Werribee, St Albans,

Pre-requisites: Students would normally be expected to successfully complete RBM1510 Human Bioscience 1A.

Descriptions: This subject aims to enable the students to extend theoretical knowledge of normal human structure and function developed in RBM1510 Human Bioscience 1A by examining more complex integrated functioning of the various systems in health and comparing these with selected deviations from health. Students will be introduced to fluid and electrolyte dynamics, the role of membrane structures and capillary dynamics, and integration of the neural, endocrine, circulatory, respiratory, and renal sub-systems in maintaining fluid, electrolyte and acid-base balance. Metabolism, body temperature control and nutrition are examined. Microbiology is introduced.

Credit Points: 24

Learning Outcomes: To be advised.

Class Contact: Six hours per week comprising three hours of lectures, three hours of laboratory and/or tutorials for one semester.

Required Reading: To be advised by lecturer.

Assessment: Test and examination, 55%; laboratory reports and assignments, 45%.

RBM1524 FUNCTIONAL ANATOMY 2

Locations: St Albans,

Pre-requisites: RBM1514 - FUNCTIONAL ANATOMY 1

Descriptions: Students study gross, histological and some surface anatomy of the thorax, abdomen and pelvis. The following regions are studied: thoracic cage, pleura and lungs, heart, mediastinal structures, abdominal wall, pelvic girdle, gastrointestinal organs, urinary organs and reproductive organs. The relevance of functional anatomy to health and healing will be highlighted. Topics studied in this unit of study may be interchanged with those of the unit of study Functional Anatomy 2 and/or 3

Credit Points: 12

Learning Outcomes: To be advised.

Class Contact: Five hours per week, 3h lectures, 2h practicals.


Assessment: Topic Test x 2, 10%; Practical exam, 35%; Theory exam, 55%.

RBM1525 ANATOMY AND PHYSIOLOGY

Locations: St Albans,

Pre-requisites: RBM1515 - ANATOMY AND PHYSIOLOGY 1 or equivalent.

Descriptions: This unit continues the study of the structure and function of the human body, using homeostatic regulation of the internal environment as the ongoing theme. The cardiovascular, respiratory, urinary, gastrointestinal and reproductive systems are placed in context with their overall regulation and co-ordination via the neuro-endocrine system. This provides an understanding of how homeostatic mechanisms regulate variables such as blood pressure, blood gas status, acid-base balance, fluid and electrolyte balance and blood glucose. The provision of nutrients to the body by the gastrointestinal system is integrated with the study of biochemistry and metabolism. An introduction to basic concepts of inheritance is followed by the study of the male and female reproductive systems.

Credit Points: 8

Learning Outcomes: On successful completion of this unit, students are expected to be able to:

- Describe the structure and function of the cardiovascular, respiratory, urinary, gastrointestinal and reproductive systems in the human body;
- Explain how the homeostatic mechanisms regulate the blood pressure, blood gas status, fluid and electrolyte balance and acid-base balance;
- Explain the basic principles of normal human genetics.

Class Contact: Four hours per week for one semester comprising lectures, tutorials and laboratory work.


Assessment: Test and assignment (20%); laboratory work/test (40%); theory examination (40%).

RBM1528 HUMAN PHYSIOLOGY 2

Locations: St Albans,

Pre-requisites: RBM1518 Physiology 1

Descriptions: This subject continues the study of the structure and functions of the body, using homeostatic regulation of the internal environment as the ongoing theme. The cardiovascular, respiratory, urinary, gastrointestinal and reproductive systems are placed in context with their overall regulation and co-ordination via the neuro-endocrine system. This provides an understanding of how homeostatic mechanisms regulate variables such as blood pressure, blood gas status, acid-base balance, fluid and electrolyte balance and blood glucose. The provision of nutrients to the body by the gastrointestinal system is integrated with the study of biochemistry and metabolism. An introduction to basic concepts of inheritance is followed by the study of the male and female reproductive systems. Topics studied in this subject may be interchanged with those of RBM1518 Physiology 1.

Credit Points: 12

Learning Outcomes: To be advised.

Class Contact: Five hours per week for one semester, comprising three hours of lectures, two hours of practical on alternate weeks and one hour tutorial class per week.

Required Reading: Seeley, Stephens & Tate 2008, Anatomy and Physiology, 8th edn, McGraw-Hill.

Assessment: Practical reports/test and assignment/worksheets, 45%; test/examination, 55%.

RBM1530 HUMAN BIOSCIENCE 2 BODY STRUCTURE & FUNCTION

Locations: St Albans,

Pre-requisites: RBM1519 Human Bioscience 1: Body Structure and Function

Descriptions: In this subject, Human Bioscience 2 (Nursing), will be continued in context with nursing in an integrated fashion. Anatomy, physiology and basic concepts in chemistry and microbiology will be taught in an integrated fashion. Content will expand previous knowledge of the organization of the human body, structure and functions of cells and the various types of tissues in the body. Further concepts in chemistry, microbiology, infection control, homeostasis and the role of the neuro-endocrine system in maintaining equilibrium within the body are emphasized. The nervous system and endocrine system are expanded to highlight their regulatory role for control, co-ordination and communication. This will be followed by discussions of other body systems emphasizing the relationship between structure and function and their relevance to Nursing.

Credit Points: 8

Learning Outcomes: To be advised.
Class Contact: Four hours per week for 12 weeks of one semester; comprising of two hours of lectures and two or three hours of practical/tutorial class.


Assessment: Practical/test/assignment, 50%; Theory test/examination, 50%

RBM1536 HUMAN BIOSCIENCE B

Locations: St Albans,

Pre-requisites: Nil.

Descriptions: In this subject, anatomy and physiology will be taught using a systems approach. The following systems will be covered: nervous, endocrine, cardiovascular, lymphatic, respiratory, gastrointestinal, renal, reproductive, musculoskeletal, integumentary. Their relevance to Nursing will be highlighted.

Credit Points: 12

Learning Outcomes: On successful completion of this bridging subject, students should have a thorough knowledge of human anatomy and physiology.

Class Contact: A total of 32 hours comprising lectures, laboratories, tutorials.


Assessment: Theory Examination (60%); Practical Examination 40%

RBM1580 FUNCTIONAL ANATOMY 3

Locations: St Albans,

Pre-requisites: RBM1514 - FUNCTIONAL ANATOMY 1

Descriptions: This subject introduces students to functional anatomy. After a brief introduction to the bones, joints, muscles, vessels and nerves of the body; students study gross anatomy using a regional approach. The following regions are studied in detail: pelvic girdle, gluteal region, hip, thigh, knee, leg, ankle and foot; pectoral girdle, shoulder, arm, elbow, forearm, wrist and hand. The relevance of functional anatomy to health and healing will be highlighted by introducing students to gross anatomy, using models and wet specimens, cross-sectional anatomy using x-rays and scans; surface anatomy; acupoint anatomy; kinesiology, gait analysis, posture, massage, muscle testing, exercise, stretching and awareness through movement and posture techniques. Topics studied in this subject may be interchanged with those of the subject Functional Anatomy 2 and/or 3.

Credit Points: 12

Learning Outcomes: To be advised.

Class Contact: Six hours per week for one semester; three hours lecture, three hours practical/tutorial.


Assessment: Theory examination 55%, practical examination and oral examination 45%.

RBM1820 NUTRITION, SOCIETY, AND COMMUNICATION

Locations: St Albans,

Pre-requisites: Nil.


Credit Points: 12

Learning Outcomes: On successful completion of this unit, students are expected to be able to:

- Recall the major metabolic pathways and their essential components, and describe their integration and regulation;
- Recall the mechanisms of gene expression, and the various potential sites of disease causation;
- Name and explain the metabolic roles of micronutrients and dietary antioxidants;
- Explain the mechanisms of enzyme action and inhibition;
- Explain the physiological consequences of important genetic diseases;
- Explain the action of ligands, antagonists and receptors and how these have regulatory roles in metabolism;
- Discuss the neuro-endocrine influences on metabolic regulation;
- Describe the metabolic transformations of steroid and other major hormones;
- Explain the principles underpinning laboratory medicine.

Class Contact: 5 hours per week or equivalent for one semester comprising lectures and tutorial/workshops.


Assessment: Presentation Oral 20%
RBM1830 DIET THERAPY I

Locations: St Albans,

Pre-requisites: Nil.

Descriptions: Dietary assessment techniques, case history taking to assess the dietary habits of clients, dietary nutrient requirements for a balanced and healthy diet, basic counselling skills with respect to the assessment and evaluation of dietary habits and the communication of corrective strategies to clients, codes of ethical practice in dealing with clients.

Credit Points: 12

Learning Outcomes: To be advised.

Class Contact: Four hours/week for one semester comprising 3 hours lecture, 1 hour tutorial


Assessment: Examination (3 hour), 50%; Clinic observation journal, 50%.

RBM1910 MICROBIOLOGY FOR CHINESE MEDICINE PRACTITIONERS

Locations: St Albans,

Pre-requisites: Nil.

Descriptions: Types of micro-organism and their place in, on and around us; how micro-organisms grow and how their growth is prevented or controlled in clinical settings; micro-organisms as agents of disease in the individual and in the population; how the body defends itself against microbial invasion and the role of the health practitioner in preventing the spread of disease. Students should reasonably expect to devote additional private contact hours of at least 3 times more than the stipulated class contact hours. Laboratory and practical sessions have a hurdle requirement of at least 80% attendance.

Credit Points: 6

Learning Outcomes: To be advised.

Class Contact: The equivalent of 36 hours for one semester comprising lectures, tutorials and laboratory practicals.


Assessment: Participation in practical sessions with at least 80% attendance unless well-documented acceptable reasons are provided (hurdle requirement); practical reports and laboratory work (30%); one topic test (15%); one 2-hour end-of-semester examination (55%). This unit is a hurdle requirement.

RBM2050 OCCUPATIONAL HYGIENE

Locations: St Albans,

Pre-requisites: RBM1061 Safety 1

Descriptions: This unit will cover the methods for monitoring and sampling stressors in workplace environments. Occupational hygiene topics will most focus on respiratory hazards (gases, aerosols, particulates), noise and thermal environments and it will describe the associated detection and measurement required for assessing these workplace stressors. This will be in the context of planning the sampling strategy, analysing and measuring the contaminant and assessing consequential outcome to a worker following their exposure. The statistical processing of data, as well as sensitivity and specificity of instruments and systems will be discussed to qualify the interpretation of results which affect the final report on the assessment of stressors in workplace environments. To assess the level of risk, comparative published exposure limit standards are described. Controls to reduce exposures will also be covered and the unit will discuss ventilation and personal protective equipment.

Credit Points: 12

Learning Outcomes: On successful completion of this unit, students are expected to be able to use available resources to plan sampling strategies to measure workplace contaminants and have some understanding of the principles in the measurement process. The student should be able to report on the significance of levels of occupational contaminants or environmental conditions, based on the method of assessment and the context of factors relating to the workplace environment at the time of sampling.

Class Contact: One two-hour lecture, one hour tutorial and a two-hour practical class for each week of a semester.


Assessment: Topic Questions 30%, Assignment Occupational Hygiene Workplace cases 40%, Tutorial participation 15%, Tests 15%.

RBM2060 ERGONOMICS

Locations: St Albans,

Pre-requisites: RBM1502 Fundamentals in Biomedical Sciences B and RBM1528 Human Physiology 2

Descriptions: This unit shows the role of ergonomics in safety. This is by showing the scope and concepts of ergonomics and its application in occupational health and safety, which include studying many of the sub-disciplines of ergonomic such as biomechanics, anthropometry, and approaches to assess energy expenditure in the workplace as well as work analysis. These approaches and methods are applied to product design and evaluation, assessment and design of the physical workplace, analysis of work activities, analysis and evaluation of work systems, injury management.

Credit Points: 12

Learning Outcomes: On successful completion of this unit, students are expected to be able to use and use information for evaluating human factors so as to apply ergonomics methodologies to report on improving workplace environments.

Class Contact: One two-hour lecture, one hour tutorial and two hour practical class for each week of a semester.


Assessment: Tests 15% P1, I1, W1, A1Three Essays 30% P2, I2, W2, A2, D2Practical reports and presentations 45% P2, I2, O2Tutorial participation 10%.

RBM2061 OCCUPATIONAL HYGIENE SCIENCE

Locations: St Albans,

Pre-requisites: Minimal requirement - completion of Diploma of Occupational Health and Safety (or equivalent)

Descriptions: This unit covers and reviews basic chemical, microbial and physical concepts, that relate to occupational hygiene. Particular attention is given to sampling strategies and the measurement of exposures that lead to energy transfer to organisms or disruption of energy within organisms.

Credit Points: 12

Learning Outcomes: To be advised.

Class Contact: Three and half hour lecture equivalents for 12 weeks and one hour tutorial equivalents delivered over 6 weeks online for one semester.

Assessment: Assignments, tutorial topic questions and tests.

RBM2100 REHABILITATION ANATOMY

Locations: St Albans,

Pre-requisites: RBM1200 - FUNCTIONAL ANATOMY OF THE LIMBS

Descriptions: The relevance of functional and clinical anatomy to health and healing will be highlighted through a detailed study of the mechanics and muscles affecting the movement of joints in the body. This information will be presented and highlighted through the study of a number of different areas including kinesiology, biomechanics, gait analysis, posture, massage, muscle testing, exercise, stretching, basic soft tissue techniques, and awareness through movement and posture. There will be a particular emphasis on muscle testing and surface anatomy. Topics studied in this unit may be interfaced with those in other Functional Anatomy units.

Credit Points: 12

Learning Outcomes: At the completion of this unit students should be able to: . understand and perform clinical tests on muscles and joints of the body.

Class Contact: Five hours per week for one semester; 3 hours lecture, 2 hours practical/tutorial.

Required Reading: Behnke, R.S., 2000, Kinetic Anatomy, Human Kinetics Australia.

Assessment: Theory examination 55%, practical examination 20% written assignment 25%.

RBM2104 PATHOPHYSIOLOGY & QUALITY USE OF MEDICINES 1

Locations: St Albans,

Pre-requisites: RBM1203 - BIOSCIENCE 2: HUMAN BODY STRUCTURE & FUNCTION

Descriptions: The aim of this unit is to present major concepts and principles of pathophysiology, illustrating their relationship to a range of common/important acute and chronic illnesses. This unit supports the topics in concurrent nursing units by: providing a scientific basis for understanding disease processes such as cellular injury, inflammation, infection, and shock; by elucidating the underlying mechanisms which result in clinical manifestations; and by presenting the rationale for therapeutic interventions. In particular, students will be introduced to pharmacokinetics, pharmacodynamics and pharmacological interventions related to the pathophysiology studied. Microbiology will also be discussed with reference to the growth and physiology of micro-organisms, their pathogenic potential, infection control and antibiotic treatment. In this unit, major disorders of the cardiovascular, respiratory, renal and nervous systems will be examined, as well as fluid and electrolyte imbalances, acid/base imbalances and shock. The pathophysiologic principles underlying disorders of major body systems and subsystems will also be discussed - for example, in cardiovascular pathophysiologv, hypertension and atherosclerosis will be examined. However, specific systems in this subject may be interfaced with those in the fourth semester subject based on the relevant National Health Priorities studied in the associated nursing unit.

Credit Points: 12

Learning Outcomes: On successful completion of this unit, students are expected to be able to:

- pathogenesis, acute and chronic conditions, and complications;
- identify the environmental influences, which contribute to various pathophysiological processes, and relate these to disease prevention as well as pathogenesis;
- discuss severe and life-threatening complications, which may develop in particular disease conditions;
- discuss the scientific basis for preventative interventions, diagnosis and management of important pathophysiological conditions;
- apply all of the above concepts to commonly encountered diseases/conditions of the: cardiovascular system, respiratory system, renal system, nervous system and acid/base imbalances and fluid/electrolyte imbalances;
- discuss the principles of pharmacodynamics and pharmacokinetics as they apply to specific drugs or drug classifications;
- discuss medication administration and nursing management of the client receiving medications including legal and ethical issues;
- accurately calculate drug dosages; and
- demonstrate skills in the safe practice of medication management.

Class Contact: Five hours per week; comprising 3-4 hours of lectures (total = 40 hours) and 1-2 hours of tutorial/laboratory or equivalent (total = 20 hours). Class contact hours per week may vary according to clinical placement allocations.


Assessment: 1. Laboratory report (1000 words) (10%) Week 3 or 4 2. Written test (10%) Week 5 or 6 3. Written assessment (1000 words) (30%) Week 12 4. Written examination (2.5 hours) (50%) Exam period Students must achieve an aggregate score of 50% and pass the written assessment to pass this subject. Supplementary assessment in the form of a supplementary theory exam will normally be offered to students achieving an N (45-49%) grade where they have also scored at least 40% for the end of semester theory exam and 50% for the written assessment. Students must achieve at least 50% on the supplementary exam to be granted a pass (P 50) as a final grade for the unit. Students who achieve a grade of 40 to 44% will be allocated L (not yet assessed) until after the supplementary exam period is over, when the grade will be converted to N (fail).

RBM2110 HUMAN BIOSCIENCE 3

Locations: St Albans,

Pre-requisites: RBM1530 - HUMAN BIOSCIENCE 2 BODY STRUCTURE & FUNCTION

Descriptions: In this subject major concepts and principles of pathophysiology illustrating their relationship to a range of common/important acute and chronic illnesses will be presented. This subject supports the topic in concurrent nursing units by providing a scientific basis for understanding disease processes such as cellular injury, inflammation, infection, neoplasia and shock; by elucidating the underlying mechanisms which result in clinical manifestations; and by presenting the rationale for therapeutic interventions. Microbiology will be discussed with reference to the growth and physiology of micro-organisms, their pathogenic potential and infection control. The pathophysiologic principles underlying disorders of body systems will be discussed; for example, in cardiovascular pathophysiology, shock and cardiac failure will be examined. Other topics covered will include disorders of haematological, immunological, respiratory and systems genetlc disorders such as cystic fibrosis; and conditions resulting in acid/base and fluid and electrolyte imbalances. The epidemiological basis for distribution of disease conditions in population sub groups (eg. Indigenous, migrant, socio-economic) will also be examined.
Credit Points: 8

Learning Outcomes: On successful completion of this subject, students should be able to:

- Describe the major categories of pathophysiological processes which underlie common and important disease conditions, such as inflammation, infection, cellular injury and neoplasia;
- Describe the major pathophysiological concepts of disease aetiology, risk factors, pathogenesis, acute and chronic conditions and complications;
- Identify the environmental influences which contribute to various pathophysiological processes and relate these to disease prevention as well as pathogenesis;
- Discuss the pathophysiology of commonly encountered and serious conditions of the cardiovascular, respiratory, renal and haematological systems;
- Discuss severe and life-threatening complications which may develop in particular disease conditions;
- Discuss the scientific basis for preventative interventions, diagnosis and management of disease conditions; and,
- Discuss basic principles of pharmacology and the scientific basis for the mode of action of commonly prescribed drugs.

Class Contact: Equivalent of 40 hours organised according to teaching mode used. Delivery of this subject is negotiated in relation to the students practicum commitments.


Assessment: Laboratory and topic tests 40% Examination 60%

RBM2133 CELL AND MOLECULAR BIOLOGY

Locations: St Albans,

Pre-requisites: RBF1310 - BIOLOGY 1 or equivalent.

Descriptions: Cell and Molecular Biology focuses on the investigation of the human body at the molecular and cellular levels. The unit will discuss the components of cells, how they are regulated, where they are located and how they interact to produce an entity that can live and reproduce, with a particular focus on biomedicine. Lecture series will cover topics such as the molecular structure, organisation and functioning of the eukaryotic cell and will make direct links to understanding of the molecular basis of health and disease as emerging in the medical research. Topics to be covered include: compartmentalisation; macromolecules, plasma and internal membrane structure; the cytoskeleton and its role in structure, function, and movement; cellular transport and cell movement mechanisms including: cell motility; cell crawling; molecular motor proteins; transport and docking of vesicles; transmembrane movements via channels (ion flux in disease) as well as endocytosis and pinocytosis; organisation and structure of the cell nucleus; organisation and function of the genome, including repetitive and non repetitive DNA sequences; regulation of gene expression; intracellular targeting of proteins including co translational and post translational pathways; communication and cell signalling between cells including chemical and hormonal signalling and receptor mediated communication, signal transduction pathways; Extracellular matrix; Cell cycle and its regulation; Energy conversion; Cell to cell contact and adhesion; the molecular mechanisms of cell adherence and metastasis, and the role of apoptosis (programmed cell death) in development; investigation of current research into molecular mechanisms in immunity, inflammation and disease including cancer and neurodegenerative conditions, e.g. role of Tau protein in Alzheimer’s and neurofibrillary tangles. Current research and laboratory techniques are covered as is current knowledge on molecular and cellular mechanisms in key areas of disease, immunity and inflammation.

Credit Points: To be advised.

Learning Outcomes: On successful completion of this unit, students are expected to be able to:

- Describe the structures and function of the cell;
- Describe the role of the cytoskeleton in cell transport and structure;
- Explain cellular transport and cell movement mechanisms including the different mechanisms for protein uptake and excretion from cells: endocytosis, exocytosis, phagocytosis;
- Describe the molecular mechanism for cell adherence;
- Explain the cell cycle, its regulation and energy conversion and cell division;
- Describe communication and cell signalling between cells including chemical and hormonal signalling and receptor mediated communication, including understanding and describe signal transduction events in cells;
- Describe protein trafficking in the cell;
- Explain how proteins are synthesized and processed by the human cell;
- Explain how ions move through lipid membranes;
- Describe the molecular structure, organisation and functioning of the eukaryotic cell;
- Discuss the molecular basis of health and disease as emerging in the medical research;
- Describe the organisation and structure of the cell nucleus and genome;
- Explain how cell function can be altered in some diseases, with reference to cancer, neurodegenerative disorders and ion channel disorders;
- Discuss current research findings about molecular mechanisms in immunity, inflammation and disease including neurodegenerative conditions.

Class Contact: Seventy-two (72) hours or equivalent for one semester comprising lectures, tutorials/laboratories/workshops and self-directed learning. Participation in practical/workshop sessions with at least 80% attendance unless well-documented acceptable reasons are provided (hurdle requirement).


Assessment: Participation in practical/workshop sessions with at least 80% attendance unless well-documented acceptable reasons are provided (hurdle requirement);

In order to obtain a pass or higher in this graded unit, normally all components of assessment must be attempted and submitted and an aggregate mark of 50% must be attained. Laboratory Work assessment items eg. written, model, poster, presentation, tests 40%

RBM2141 PHARMACOLOGY AND NUTRITION

Locations: St Albans,

Pre-requisites: RMB1810 - NUTRITIONAL BIOCHEMISTRY

Descriptions: This unit covers the nutritional roles of functional foods; the classification of prescription drugs and their therapeutic uses and contra-indications; pharmacodynamics; polypharmacy; psychonutrition; drug-nutrient interactions.

Credit Points: 12

Learning Outcomes: At the conclusion of this unit the successful student will be able to:

- recall the functional foods commonly encountered in foodstuffs, and their nutritional roles;
- recall the major classes of prescription drugs, their therapeutic roles and contra-indications;
• explain the principles of pharmacodynamics;
• be aware of the potential for specific drug-nutrient interactions and be able to demonstrate ability to retrieve such published information;
• be aware of the potential effects of polypharmacy;
• recall the effects of selected psychonutrients.

Class Contact: 3 hrs/wk, made up of lectures, and tutorials/workshops

Required Reading: Bryant B, Knights K; Pharmacology for Health Professionals. 2007. 2nd ed. Elsevier, NSW

Assessment: Exam 60% assignments (2) 40%

RBM2161 ERGONOMIC SCIENCE

Locations: St Albans,

Pre-requisites: Minimal requirement - Completion of Diploma of Occupational Health and Safety (or equivalent)

Descriptions: Ergonomics utilizes a number of contemporary inter-disciplines - anatomy and physiology, sociology and psychology, physics and engineering etc., which will extend and merge toward solving ergonomic problems. Topics will include the maintenance and distribution or impact of energy in the body, application of forces in regard to human movement, the physiology of sense organs, work design, man/machine information exchange; psychological, social, and economic contributions to work. The subject will also cover qualitative measurements, task analysis and job design

Credit Points: 12

Learning Outcomes: To be advised.

Class Contact: Three and half hour lecture equivalents for 12 weeks and one hour tutorial/practical delivered online over 6 weeks for one semester.

Required Reading: Bridger RS 2003. Introduction to ergonomics. 2nd edition


Assessment: Assignments, tutorial topic questions and tests.

RBM2200 FUNCTIONAL ANATOMY OF THE HEAD AND BACK

Locations: St Albans,

Pre-requisites: RBM1100 - FUNCTIONAL ANATOMY OF THE TRUNK

Descriptions: Students study gross and histological anatomy of the head, neck and back. The following regions are studied: skull and cranial cavity, brain and the associated nervous system, scalp, face, eye, ear, nasal and oral cavities, major structures of the neck, vertebral column, spinal cord and nerves, deep and superficial back muscles. The relevance of functional anatomy to health and healing will be highlighted. Topics included in the unit may be interleaved with those in other Functional Anatomy units.

Credit Points: 12

Learning Outcomes: On successful completion of this unit students should be able to:

• understand the anatomy and histology of the structures of the head and neck
• understand the anatomy and histology of the structures of the back
• problem solve common clinical problems, such as stroke and sinusitis.

Class Contact: Five hours per week for one semester comprising 2-3hours lectures and 2-3hours tutorial/practical.


Assessment: Topic tests 10%, Theory examination 45%, practical examination 45%.

RBM2201 CONSERVATION GENETICS

Locations: St Albans,

Pre-requisites: RBF1310 Biology 1, RBF1320 Biology 2, RBF2610 Fundamentals of Ecology

Descriptions: Context and overview

• Genetic diversity: single loci
• Genetic diversity: quantitative variation
• Large population: natural selection, adaptation, mutation and migration
• Small populations: loss of diversity, genetic drift, effective population size, inbreeding and inbreeding depression
• Captive populations: Management, reintroductions, breeding and case studies
• Molecular tools
• Species biology: taxonomy, genetic distances, tree of life, phylogeography and phylodendron, consequences of hybridization, management of hybridization and kinship
• Populations: structure, gene flow and fragmentation, conservation units, management and viability analysis. Life states and extinction modelling.

Laboratory/ practical sessions

• DNA extraction
• Electrophoresis
• Determining ploidy levels
• Phylogenetics
• Polymerase Chain Reaction (PCR) methods for genetic analysis
• Inbreeding/outbreeding models
• Use of computer software for simulations (population viability analysis), and various genetic indices to determine phylogenetic relationships

Field Trips

Credit Points: 12

Learning Outcomes: Upon completion of the subject, students will have a thorough understanding of the role and importance of genetics to the management of species and populations and its application to the field of natural resource management as a whole, including the limitations of genetic data. As well as having a theoretical basis on which to base management decisions, students will have practical experience with the methods used in modern genetics and how these tools can be applied to the management of species and populations. Students will be able to critically analyse published data relating to taxonomy and phylogenetic relationships and their implications for conservation. Students will therefore be equipped to make decisions about the appropriateness of reintroduction of plants or animals, and the implications of reproductive interventions such as manual pollination or selective breeding.

Class Contact: Five hours per week comprising two hours lecture per week and the equivalent of three hours per week practical work including laboratory sessions, field trips and computer sessions.


Assessment: Two hour written examination (40%). CGA: A2, P2, I2 Written assignment of 2000 words (30%). CGA: I2/3, P3, W2/3Class Presentation of the assignment (10%). CGA: O2/3, I2Practical reports and simulations (20%). CGA: C2, P2, W2, A2
RBM2205 PATHOPHYSIOLOGY & QUALITY USE OF MEDICINES 2

Locations: St Albans,
Pre-requisites: RBM2104 - PATHOPHYSIOLOGY & QUALITY USE OF MEDICINES 1

Descriptions: This unit furthers the understanding of pathophysiological principles and disease processes introduced in Pathophysiology & Quality Use of Medicine 1 and supports the content in concurrent nursing units. Topics will include neoplasia, disorders of the endocrine, musculoskeletal and haematological systems and the gastrointestinal tract and the quality use of medicines. Disorders of the reproductive tract including infertility will be presented. Important genetic disorders and their modes of inheritance will also be examined. Specific systems in this subject may be interchanged with those in the third semester subject based on the relevant National Health Priorities studied in the associated nursing unit. Students will further develop their knowledge of medications, their administration and management with a particular focus on drugs used in clients with a mental illness, diabetes mellitus, cancer, arthritis and musculoskeletal conditions and related co-morbidities.

Credit Points: 12

Learning Outcomes: On successful completion of this unit, students are expected to be able to:

- understand the fundamentals of microbiology and infection control;
- appreciate the relevance of microbiology in the work of health professionals;
- describe the major pathophysiological processes, which underlie commonly encountered diseases/conditions;
- understand the major pathophysiological concepts of disease and how diseases progress such as: aetiology, risk factors; pathogenesis, acute and chronic conditions, and complications;
- identify the environmental influences, which contribute to various pathophysiological processes, and relate these to disease prevention as well as pathogenesis;
- discuss severe and life-threatening complications, which may develop in particular disease conditions;
- discuss the scientific basis for preventative interventions, diagnosis and management of important pathophysiological conditions;
- apply all of the above concepts to commonly encountered diseases/conditions of the: cardiovascular system, respiratory system, renal system, nervous system and acid/base imbalances and fluid/electrolyte imbalances;
- discuss the principles of pharmacodynamics and pharmacokinetics as they apply to specific drugs or drug classifications;
- discuss medication administration and nursing management of the client receiving medications including legal and ethical issues;
- accurately calculate drug dosages; and
- demonstrate skills in the safe practice of medication management.

Class Contact: A total of 60 hours, comprising 3-4 hours of lectures (total = 40 hours) and 1-2 hours of tutorial/laboratory or equivalent (total = 20 hours). Class contact hours per week may vary according to clinical placement allocations.


Assessment: 1. Written test (10%) Week 4 or 5 2. Written test (10%) Week 8 or 9 3. Written assessment (1000 words) (30%) Week 12 4. Written examination (2.5 hours) (50%) Exam period Students must achieve an aggregate score of 50% and pass the written assessment to pass this subject. Supplementary assessment in the form of a supplementary theory exam will normally be offered to students achieving an N (45-49%) grade where they have also scored at least 40% for the end of semester theory exam and 50% for the written assessment. Students must achieve at least 50% on the supplementary exam to be granted a pass (P 50) as a final grade for the unit. Students who achieve a grade of 40 to 44% will be allocated L (not yet assessed) until after the supplementary exam period is over, when the grade will be converted to N (fail).

RBM2210 HUMAN BIOSCIENCE 4

Locations: St Albans,
Pre-requisites: RBM2110 - HUMAN BIOSCIENCE 3

Descriptions: In this subject major concepts and principles of pathophysiology illustrating their relationship to a range of common/important acute and chronic illnesses will be presented. This subject supports the topic in concurrent nursing units by providing a scientific basis for understanding disease processes. The pathophysiological principles underlying disorders of body systems will be discussed; for example, atherosclerosis and the nervous, endocrine, gastrointestinal, musculoskeletal and reproductive systems will be examined. The epidemiological basis for distribution of disease conditions in population sub-groups (eg. Indigenous, migrant, socio-economic) will also be examined.

Credit Points: 8

Learning Outcomes: On successful completion of this subject, students should be able to:

- Describe the major pathophysiological concepts of disease aetiology, risk factors, pathogenesis, acute and chronic conditions and complications;
- Identify the environmental influences which contribute to various pathophysiological processes and relate these to disease prevention as well as pathogenesis;
- Discuss the pathophysiology of commonly encountered and serious conditions of the nervous, endocrine, musculoskeletal, gastrointestinal and reproductive systems;
- Discuss severe and life-threatening complications which may develop in particular disease conditions;
- Discuss the scientific basis for preventative interventions, diagnosis and management of disease conditions; and
- Discuss basic principles of pharmacology and the scientific basis for the mode of action of commonly prescribed drugs.

Class Contact: Equivalent of 40 hours organised according to teaching mode used. Delivery of this subject is negotiated in relation to the students practicum commitments.


Assessment: Topic tests 40% Examination 60%

RBM2218 PRACTIONER HEALTH 2

Locations: St Albans,
Pre-requisites: AHE2111 Practitioner Health, RBM1211 Bioscience 2; or equivalents

Descriptions: This unit will contain:

- Overview of Nutrition
- Digestion, Absorption and Transport
- The Carbohydrates: Sugars, Starches and Fibre
- The Lipids: Triglycerides, Phospholipids and Sterols
Learning Outcomes: On successful completion of this unit, students are expected to be able to:

- Provide the key concepts and definitions related to nutrition;
- Define the various essential nutrients, and identify the chemical compositions of those nutrients;
- Discuss the role energy plays, and identify the energy-yielding nutrients available to the human body;
- Discuss the concepts of digestion, absorption and transportation in relation to nutrition;
- Assess food choices against recommended dietary intakes, and implement appropriate diet planning for health;
- Discuss nutritional requirements across the lifespan.

Class Contact: Forty-eight (48) hours over one 12-week semester comprising lectures and practical classes delivered as laboratories or tutorials


Assessment: To obtain a pass or higher in this graded unit, all components of assessment must be passed. Failed assessments may be re-attempted/re-submitted once only. Maximum possible marks to be obtained on any resubmission will be 50%. This unit is a hurdle requirement.

Test Test 20%

RBM2220 NUTRITIONAL BIOCHEMISTRY 2

Locations: St Albans,
Pre-requisites: RBM1110 - NUTRITIONAL BIOCHEMISTRY 1 or equivalent;

Credit Points: 12

RBM2221 NUTRITIONAL BIOCHEMISTRY

Locations: St Albans,
Pre-requisites: RBM1810 - NUTRITIONAL BIOCHEMISTRY

Credit Points: 12

RBM2222 PERFORMANCE NUTRITION

Locations: St Albans,
Pre-requisites: RBM2260 - DIET AND NUTRITION
Descriptions: The importance of nutrition and specific ergonomic aids to enhancing physical performance will be demonstrated. This unit integrates nutrition,
biochemistry and intermediary metabolism with the physiology of exercise, allowing
the student to apply this knowledge to the designing of nutritional advice to enhance
human performance. The macro- and micro-nutrient needs of different sport and
exercise types will be discussed with the aim of arriving at the skills to provide
appropriate practical dietary and nutritional therapeutic advice for athletes.

Credit Points: 12

Learning Outcomes: On successful completion of this unit, students are expected to
be able to:

• Integrate their knowledge of biochemistry and physiology of exercise with the
  nutritional and ergonomic needs to optimize performance;
• Assess the nutritional needs of different exercise modalities;
• Discuss the parameters influencing the nutrient and fluid availability before,
  during and recovery after exercise; and
• Develop skills in prescribing nutritional and ergonomic aids to enhance exercise
  performance.

Class Contact: Four hours per week or equivalent for one semester, comprising
lectures/tutorials and off-campus portfolio preparation.

Required Reading: Bouros, F. (2002). Essentials of sports nutrition (2nd ed.).
and exercise nutrition (2nd ed.). Baltimore: Lippincott Williams & Wilkins.

Assessment: Case study/portfolio (20%); dietary and supplement prescription
exercise (20%); final examination (60%).

RBM2260 DIET AND NUTRITION

Locations: St Albans,

Pre-requisites: RBM1528 Human Physiology 2 or equivalent

Descriptions: This subject will demonstrate the relationships between
gastrointestinal function, diet and human health. The subject examines the
gastrointestinal structure and function, body composition, anthropometry, chemical
nature of the nutrients, and their roles in body structure and function, energy
intake and regulation, metabolism of nutrients, nutritional requirements under
various environmental and physiological states, diet and disease, dietary guidelines,
hormonal control of digestion, vitamins as antioxidants, nutrition and prevention of
disease, role of intestinal flora in nutrition.

Credit Points: 12

Learning Outcomes: At the successful completion of this unit, students should have:a) developed a detailed knowledge of the different classes of nutrients, e.g.
carbohydrates, lipids, proteins, vitamins and minerals b) described the composition,
role and regulation of these nutrients within a range of different diets. c) described
the importance of digestion, metabolism, nutrition and energy balance to the
wellbeing of an individual.

Class Contact: To be advised.

Required Reading: Understanding Nutrition, Whitney and Rolffes 2008, 11th
Edition, Thomson Wadsworth

Assessment: Tests, 20%; laboratory reports, 30%; final examination, 50%.

RBM2261 PUBLIC AND ENVIRONMENTAL HEALTH

Locations: To be advised., Saint Albans

Pre-requisites: Minimal requirement - Completion of Diploma of Occupational
Health and Safety (or equivalent) OR Completion of Level 1 BSc Biomedical Sciences
(or equivalent)

Descriptions: The decisions a society makes about its public and environment health
are based on scientific information to assess the degree and distribution of its risks.
These measures of the determinants of risks the strategies to reduce or remove
risk reflect the values of the society. These values are expressed in its customs and
laws. The sciences underlying the environmental and public laws include not only
biology and chemistry, but others such as psychology, sociology and economics. The
role of the public health political process is critically dependent on measurements of
health and illness, the compromise between waste and the balance of communal
wealth with the perceived impacts of these in drafting public and environmental
health laws and their implementation.

Credit Points: 12

Learning Outcomes: To be advised.

Class Contact: Two hour online lecture and one hour tutorial equivalents delivered
online per week for one semester.


Assessment: Assignments, tutorial topic questions and tests.

RBM2361 SAFETY PRACTICE

Locations: St Albans,

Pre-requisites: RBM2161 Ergonomic Science (equivalent) OR Completion of Level
1 BSc Biomedical Sciences (or equivalent).

Descriptions: Skills in making the Occupational Health and Safety unit of a business
become part of the organization. These require that there is sufficient understanding
of ergonomics - to achieve optimum productivity and cost efficiency and minimum
risk of injury, quality management, environmental affairs, behavioural safety and
basic financial management.

Credit Points: 12

Learning Outcomes: To be advised.

Class Contact: Two hour lecture and one hour tutorial equivalents delivered online
per week for one semester.

Required Reading: Frick K Jensen PL Quinlon M Wilthagen T Ed.2000 Systematic
occupational health and safety management: perspectives on an international
the 21st century. Education and training needs for next decades occupational safety
and health personnel. Washington, National Academy Press, Manuelle FA. 2003 On
NJ Premium Calculations Links

Assessment: Assignments, tutorial topic questions and tests.

RBM2365 MEDICAL MICROBIOLOGY

Locations: St Albans,

Pre-requisites: RBM1528 Human Physiology 2 or equivalent.

Descriptions: Topics include: nature and classification of micro organisms and their
growth requirements, microbial genetics, normal flora, host defence mechanisms,
immunosresponse, host microbe interaction, infection, sterilisation, disinfection,
sepsis, antisepsis, sources and mode of transfer of infectious agents and the
compromised host, principles of safe clinical practice, antibiotics, epidemiology,
analytical methods and food safety. To investigate application of microorganisms in
medicine, industry and biological work products.

Credit Points: 12

Learning Outcomes: On successful completion of this unit, it is expected that
students will be able to:

• Identify and describe the differences of main groups of microorganisms,
  including bacteria, viruses, fungi, protozoa and helminthes;
• Describe the microflora associated with the human body and in various environments;
• Discuss the transmission and infection control of microorganisms;
• Explain microbial genetics; and
• Describe the chemotherapeutic agents and the importance of epidemiology, and their relevance to a health practitioner.

Class Contact: 48 hours or equivalent for one semester comprising lectures and laboratories.


Assessment: Test Topic test 10%

RBM2461 WORKPLACE PLACEMENT A

Locations: St Albans, Internet

Pre-requisites: RBM1061 Safety 1, RBM2061 Safety 2, BLO2233 Health and Safety Law

Descriptions: This placement will allow students to undertake a structured work experience in setting controls, prevention and protection to reduce harm in the workplace. Within their workplace(s) they will need to show that they have practiced OHS which is reflected in knowledge of the particular hazards and risks gained from their workplace experience(s) and workplace policies and programs.

Credit Points: 12

Learning Outcomes: On successful completion of this unit, students are expected to be able to apply OHS legislation(s) and recognised workplace OHS policies. These are set to maintain safety systems based on the control of hazards to protect workers from injury, illness and disease. Students will also show some applied understanding of the process for rehabilitation of injured workers and return to work programs.

Class Contact: Attend for a minimum of 60 hours in a designated workplace(s).


Assessment: Assessment will be based on applied understanding of the workplace(s) occupational health and safety policies and procedures as well as the recording and analysis of incidents, workers’ compensation cases and return to work programs. Where possible there needs to be some discussion related to topics covered in Safety 1 (e.g. machine guarding and interlocking) and Safety 2 (e.g. comment on work injuries and incidents).

RBM2517 HUMAN BIOSCIENCE 3

Locations: St Albans,

Pre-requisites: RBM1530 Human Bioscience 2.

Descriptions: The presentation of major concepts and principles of pathophysiology; illustrating their relationship to a range of common/important acute and chronic illness. This subject supports the topics in concurrent nursing units by providing a scientific basis for understanding disease processes such as cellular injury, inflammation, infection, and shock; by elucidating the underlying mechanisms which results in clinical manifestations; and by presenting the rationale for therapeutic interventions. Microbiology will be discussed with reference to the growth and physiology of micro-organisms, their pathogenic potential, infection control and antibiotic treatment. The pathophysiological principles underlying disorders of major body systems and subsystems will be discussed; for example, in cardiovascular pathophysiology, shock, cardiac failure, hypertension and atherosclerosis will be examined. Other topics covered may include haematology, the respiratory system, renal system, and fluid and electrolyte imbalances, however specific systems in this subject may be interchanged with those in the fourth semester subject as appropriate.

Credit Points: 8

Learning Outcomes: To be advised.

Class Contact: 40 hours per semester of lectures and tutorial.


Assessment: Test, 30%; examination, 70%.

RBM2524 FUNCTIONAL ANATOMY 3

Locations: St Albans,

Pre-requisites: RBM1580.

Descriptions: The relevance of functional anatomy to health and healing will be highlighted by studying to clinical anatomy, kinesiology, biomechanics, gait analysis, posture, massage, muscle testing, exercise, stretching, basic soft tissue techniques, and awareness through movement and posture. There will be a particular emphasis on muscle testing and surface anatomy. Topics studied in this subject may be interchanged with those of the subject RBM1514 Functional Anatomy 1 and RBM1580 Functional Anatomy 2.

Credit Points: 12

Learning Outcomes: To be advised.

Class Contact: Sixteen hours for one semester.


Assessment: Theory examination 55%, practical examination and oral examination 45%
RBM2528 PATHOPHYSIOLOGY IN MIDWIFERY

Locations: St Albans,
Pre-requisites: HHA1171 - ANATOMY 1

Descriptions: This unit of study will introduce pathophysiological concepts, principles and disease processes, illustrating their relationship to a range of common and important acute and chronic disease conditions, relevant to midwifery practice. The aims of the subject are: to provide a scientific basis for understanding disease processes such as cellular injury, inflammation and neoplasia; to elucidate the underlying mechanisms which result in clinical manifestation; and to present the rationales for therapeutic interventions. Microbiology will be discussed with reference to the pathogenic potential and infection control of microorganisms. The pathophysiological principles underlying disorders of body systems will be discussed with an emphasis on midwifery; for example, in cardiovascular pathophysiology: hypertensive disorders of pregnancy and shock associated with blood loss will be examined. Other topics to be covered will include disorders of: blood (eg. anemias) and body defences (eg. incompatibilities), the renal system, fluid and electrolytes, the reproductive system (eg. sexually transmitted diseases, infertility), endocrinology, metabolism (eg. diabetes) and nutrition associated with pregnancy. Genetic and developmental abnormalities of the foetus will also be examined.

Credit Points: 8
Learning Outcomes: To be advised.
Class Contact: 56 hours comprising lectures (3 hours/week); laboratories/tutorial (1 hour/week). Laboratory report - 15%, Test -15%, Examination - 70%.


Assessment: To be advised.

RBM2530 PATHOPHYSIOLOGY 1

Locations: St Albans,
Pre-requisites: RBM1520 - HUMAN BIO SCIENCE 2 - PSYCHOLOGY OR

Descriptions: This unit aims to provide students with an understanding of the control and co-ordination of body systems and the effects of disturbances to body functions. The mental status and some psychosocial factors associated with these processes will be discussed. Students are introduced to major pathologic processes which may affect all parts of the body. Topics include tissue injury, inflammation and repair, normal immune function and deviations from normal, cancer from the molecular level to the whole person, neural and endocrine dysfunction including impaired cognition such as dementia and impaired co-ordination and control. In the laboratory, students will be introduced to basic laboratory techniques and apply scientific principles to the assessment of dysfunction in humans. Students are also introduced to the research literature, research techniques and the communication of scientific information by a series of presentations. There may be some interchange of topic material relating to specific body systems between RBM2530 and RBM2540 and the specific diseases chosen to illustrate major processes may vary as appropriate.

Credit Points: 12
Learning Outcomes: At the successful completion of this unit, students will be able to:
• Recognise the need for, locate and critically analyse scientific data, especially with respect to epidemiology, disease causation and normal reference ranges for physiological parameters.
• Recognise the main types of study used to identify the causes of disease and critically assess the quality of these studies.
• Describe and explain the major concepts of disease and how homeostatic imbalances may progress to disease: for example, aetiology, risk factors, pathogenesis, acute and chronic conditions, sequelae and complications.
• Describe and explain how a range of general pathologic (disease) processes and homeostatic imbalances interplay with body systems. These processes may include: injury, inflammation and immunopathology, neoplasia, genetic disorders and dysfunction, endocrine disorders and neurological disorders.
• Utilise basic scientific principles of adequate and appropriate controls in the investigation of disease. Apply scientific thought and process to the investigation of pathological conditions, especially with respect to physical examination and measurement of physiological parameters.
• Utilise knowledge of pathophysiology to solve moderately complex problems and analyse case studies of disease.
• Discuss the scientific basis for preventative interventions, and management of important pathophysiological conditions.
• Recognise how psychosocial and cultural issues may contribute to disease processes, and apply this knowledge to understand how different strategies may be necessary to prevent the development or worsening of disease in a context of social diversity.
• Undertake group tasks and reflect critically on processes, specifically in the context of laboratory exercises where data is collected and analysed.
• Recognise a range of written scientific formats, such as case studies, reviews and original reports of research. Produce assignments and laboratory reports in a range of formats.
• Communicate orally with peers through presentations, discussion and debate in the context of understanding and investigating disease.

Class Contact: 78 hours per semester, comprising three hours of lectures per week, ten three hour laboratory sessions incorporating 2.5 hours of experimental work plus 0.5 hours of tutorial, and eleven hours of formal tutorial for one semester.


Assessment: Test and examinations, 50%; practical work, 35%; Assignment, 15%. Students are required to obtain a satisfactory grade in all components of the assessment to obtain a pass grade.

RBM2540 PATHOPHYSIOLOGY 2

Locations: St Albans,
Pre-requisites: RBM2530 Pathophysiology 1 or equivalent

Descriptions: This subject primarily examines the effects of dysfunction in particular human body systems, drawing on the knowledge of basic pathological processes and overall regulation of the human body discussed in RBM2530. Overall organ and system dysfunction such as hepatic, renal, cardiovascular and respiratory failure will be discussed. Specific disorders of the following systems will also be discussed: cardiovascular, renal, respiratory, blood, reproductive, gastrointestinal and musculoskeletal. Major disease types and processes such as circulatory shock, atherosclerosis, disorders of acid-base balance and sexually transmitted diseases will be examined and the psychosocial effects of such disorders will be included. Specific diseases will be chosen to illustrate the major concepts as appropriate. Students are introduced to further techniques for assessment of disorders, which may include physical assessments, spirometry, electrocardiography and various biochemical analyses. There may be some interchange of topic material relating to specific body systems between RBM2530 and RBM2540 and the specific diseases chosen to illustrate major processes may vary as appropriate.

Credit Points: 12
Learning Outcomes: On successful completion of this unit, students will be able to:
• Recognise the need for, locate and critically analyse scientific data, especially with respect to epidemiology, disease causation and normal reference ranges for physiological parameters.

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• Recognise the main types of study used to identify the causes of disease and critically assess the quality of these studies.
• Describe and explain a range of disease processes and homeostatic imbalances with reference to specific organ systems and their interplay. These systems may include: respiratory, reproductive, renal, cardiovascular, musculo-skeletal, gastrointestinal and blood.
• Utilise basic scientific principles of adequate and appropriate controls in the investigation of disease. Apply scientific thought and process to the investigation of pathological conditions, especially with respect to physical examination and measurement of physiological parameters.
• Utilise knowledge of pathophysiology to solve moderately complex problems and analyse case studies of disease.
• Discuss the scientific basis for preventative interventions, and management of important pathophysiological conditions.
• Recognise how psychosocial and cultural issues may contribute to disease processes, and apply this knowledge to understand how different strategies may be necessary to prevent the development or worsening of disease in a context of social diversity.
• Undertake group tasks and reflect critically on processes, specifically in the context of laboratory exercises where data is collected and analysed.
• Recognise a range of written scientific formats, such as case studies, reviews and original reports of research. Produce assignments and laboratory reports in a range of formats.
• Communicate orally with peers through presentations, discussion and debate in the context of understanding and investigating disease.

Class Contact: To be advised.


Assessment: Test and examinations, 50%; practical work, 35%, assignment 15%. Students are required to obtain a satisfactory grade in all components of the assessment to obtain a pass grade.

RBM2541 HUMAN BIOSCIENCE 3 PATHOPHYSIOLOGY
Locations: St Albans,
Pre-requisites: RBM 1530 Human Bioscience 2: Body Structure and Function
Descriptions: In this subject major concepts and principles of pathophysiology illustrating their relationship to a range of common/important acute and chronic illnesses will be presented. This subject supports the topic in concurrent nursing units by providing a scientific basis for understanding disease processes such as cellular injury, inflammation, infection, neoplasia and shock; by elucidating the underlying mechanisms which result in clinical manifestations; and by presenting the rationales for therapeutic interventions. Microbiology will be discussed with reference to the growth and physiology of micro-organisms, their pathogenic potential and infection control. The pathophysiological principles underlying disorders of body systems will be discussed; for example, in cardiovascular pathophysiology, shock, cardiac failure, hypertension and atherosclerosis, will be examined. Other topics covered will include disorders of the haematological, immunological, respiratory, renal, nervous, endocrine, gastrointestinal, musculoskeletal and reproductive systems; genetic disorders such as cystic fibrosis; and conditions resulting in acid/base and fluid and electrolyte imbalances. The epidemiological basis for distribution of disease conditions in population sub-groups (e.g. Indigenous, migrant, socio-economic) will also be examined.
Credit Points: 16
Learning Outcomes: On completion of this subject, students should be able to: On completion of this subject, students should be able to:
• Describe the major categories of pathophysiological processes which underlie common and important disease conditions, such as inflammation, infection, cellular injury and neoplasia;
• Understand the major pathophysiological concepts of disease etiology, risk factors, pathogenesis, acute and chronic conditions and complications;
• Identify the environmental influences which contribute to various pathophysiological processes and relate these to disease prevention as well as pathogenesis;
• Discuss the pathophysiology of commonly encountered and serious conditions of the cardiovascular, respiratory, renal, haematological, nervous, endocrine, musculoskeletal, gastrointestinal and reproductive systems;
• Discuss severe and life-threatening complications which may develop in particular disease conditions;
• Discuss the scientific basis for preventative interventions, diagnosis and management of disease conditions; and
• Discuss basic principles of pharmacology and the scientific basis for the mode of action of commonly prescribed drugs.
• Discuss severe and life-threatening complications which may develop in particular disease conditions;
• Discuss the scientific basis for preventative interventions, diagnosis and management of disease conditions; and
• Discuss basic principles of pharmacology and the scientific basis for the mode of action of commonly prescribed drugs.

Class Contact: Equivalent of 80 hours organised according to teaching mode used. Delivery of this subject is negotiated in relation to the students’ practicum commitments.


Assessment: Laboratory report and topic tests 40%, Examination 60%.

RBM2560 MEDICAL BIOCHEMISTRY
Locations: St Albans,
Pre-requisites: RBM1518 Human Physiology 1, RCS1120 Chemistry for Biomedical Sciences B.
Descriptions: The aim of this subject is to provide a foundation in biochemical principles with special emphasis on medical and nutritional applications. Firstly, foundations of biochemistry will be covered, e.g. biological buffers, structures of amino acids, nucleotides, carbohydrates, proteins, vitamins and cofactors. Other topics covered include enzymes, bioenergetics, and carbohydrate metabolism pathways. The practical component (compulsory), consisting of experimental sessions related to the theoretical topics covered in the lectures, will allow students...
to develop manual, observational, and recording skills.

Credit Points: 12

Learning Outcomes: To be advised.

Class Contact: Five hours per week, comprising two hours of lectures and three hours of practicals/tutorials for one semester.


Assessment: Practical Work: 40%; Final Examination: 60%

RBM2570 PHYTOPHARMACEUTICS

Locations: St Albans,

Pre-requisites: RBM 1525 Anatomy and Physiology 2 or equivalent

Descriptions: Basic pharmacokinetics, LD50, toxicity, phytopharmacology, plant materials commonly used in therapy, and indications for their use. Basis for drug/herb interactions with nutrients.

Credit Points: 12

Learning Outcomes: On successful completion of this unit, students will be able to:

- Demonstrate knowledge of basic pharmacokinetics, concepts of LD50 and toxicity, and drug-nutrient interactions.
- Demonstrate knowledge of the major groups of plant materials commonly used in complementary therapies, and indications for their use.
- Demonstrate an awareness of the potential for drug/herb/nutrient interactions.

Class Contact: Four hrs per week for one semester, or equivalent

Required Reading: Kanagaratnum N, Botany Monograph. Victoria University, St Albans, 2005

Assessment: Assignment, 2000 words, 40% Examination, 2 hrs, 60%

RBM2580 ADVANCED FUNCTIONAL ANATOMY

Locations: St Albans,

Pre-requisites: RBM1524 - FUNCTIONAL ANATOMY 2

Descriptions: The relevance of functional and clinical anatomy to health and healing will be highlighted through a detailed study of the mechanics and muscles affecting the movement of joints in the body. This information will be presented and highlighted through the study of a number of different areas including kinesiology, biomechanics, gait analysis, posture, massage, muscle testing, exercise, stretching, basic soft tissue techniques, and awareness through movement and posture. There will be a particular emphasis on muscle testing and surface anatomy. Topics included in the subject may be interchanged with those of the subject RBM 1514 Functional Anatomy 1 and RBM 1524 Functional Anatomy 2

Credit Points: 12

Learning Outcomes: To be advised.

Class Contact: Six hours per week for one semester comprising three one-hour lectures and one three-hour tutorial/practical session.

Required Reading: Behnke, R.S., 2000, Kinetic Anatomy, Human Kinetics Australia.

Assessment: Theory examination 55%, practical examination 20%, written assignment 25%

RBM2610 BIOMEDICAL SCIENCES AND SOCIETY

Locations: St Albans,

Pre-requisites: Completion of a full first year of tertiary study which must include two semester units in biology/human physiology/human bioscience and two semester units in either psychology or communications or foundations/knowledge.

Descriptions: The subject examines images of the human body in society with particular reference to health and disease. There are several themes within this subject. The first theme examines how biomedical science defines health and disease, sanity and mental illness and influences our concepts of the human body. The second theme provides a brief introduction to the evolution of humans and the evolution of consciousness, drawing upon Darwinian theory. Questions such as what it means to be human, what consciousness is and whether there are biologically determined roles for men and women may be discussed. The human genome project will be examined. The third theme is the current image of the human body in society with respect to what is considered healthy and what is considered to be acceptable modification of the human body. Topics which may be discussed here include body image disorders, cloning, tissue engineering, and xenotransplantation.

Credit Points: 12

Learning Outcomes: To be advised.

Class Contact: Four hours per week comprising two one hour lectures and one two hour tutorial/seminar session for one semester.


Assessment: Two essays, 30% each; one tutorial presentation/debate, 25%; tutorial attendance and participation, 15%.

RBM2750 NUTRITION

Locations: Werribee,

Pre-requisites: RBF1310 Biology 2 or equivalent. Students would be expected to have studied or undertake concurrent study in RBF2520 Biochemistry 1.

Descriptions: The unit aims to provide an introduction to the principles of human nutrition as a background for further studies in Food Technology (units RBF3731 and RBF3732), to enable students to appreciate the nutritional consequences and responsibilities associated with the provision, processing and development of food and food products. This subject examines: body composition and anthropometry; nutrient requirements and role in body structure and function; energy intake and expenditure; food and nutrient supply; nutritional requirements under different environmental and physiological states; diet and health; dietary guidelines; dietary requirements and special dietary foods.

Credit Points: 12

Learning Outcomes: To be advised.

Class Contact: Four hours per week for one semester comprising three hours of lectures and one hour of tutorials.


Assessment: Assignments, 30%; final examination, 70%.
RBM2800 CARDIORESPIRATORY AND RENAL PHYSIOLOGY

Locations: Footscray Park,

Pre-requisites: RMB1518 Human Physiology 1 and RMB1528 Human Physiology 2.

Descriptions: This subject aims to provide students with an understanding of the function, control and coordination of the cardiovascular, respiratory and renal systems. The subject will examine cardiac, pulmonary and renal function and normal circulatory, respiratory and renal dynamics. An overview of the coordination of these systems will be achieved through an examination of the mechanisms involved in maintaining fluid and electrolyte balance. The role of membrane structures and capillary dynamics, and the integration of neural, endocrine function in the control of cardiovascular, respiratory and renal systems. Homeostatic control of the cardiac, pulmonary and renal systems will also be examined by investigating their responses to stressors, including exercise, high altitude, increased temperature, spaceflight and aging.

Credit Points: 12

Learning Outcomes: To be advised.

Class Contact: Six hours per week for one semester comprising three hours of practical and/or tutorial per week.


Assessment: Semester examination, 60%; practical reports, 20%; assignment, 20%.

RBM2855 NUTRITIONAL THERAPEUTICS B

Locations: St Albans,

Pre-requisites: RMB1830 Diet Therapy 1; RMB 2850 Nutritional Therapeutics A.

Descriptions: Symptoms of system dysfunction in the following body systems - skin, respiratory system, nervous system, circulatory system, genito-urinary system, immune system, musculoskeletal system and hormonal system; using observation and evaluating case histories; working from case history records; identification of nutritional deficiency within a patient's case history; prioritising treatment, including the use of dietary supplements; lifestyle effects that may flow from the treatment; lifestyle effects on normal function.

Credit Points: 12

Learning Outcomes: To be advised.

Class Contact: Four hours per week for one semester comprising two hours lecture, two hours tutorial/workshop.


Assessment: Examination (3 hours), 50%; case history, 50%.

RBM2911 PATHOPHYSIOLOGY 1

Locations: St Albans,

Pre-requisites: RMB1525 - ANATOMY AND PHYSIOLOGY OR equivalent.

Descriptions: Emphasis on fundamental pathophysiological processes affecting body and cellular systems; introduction to acute and chronic conditions and common and rare disease profiles affecting the cardiovascular, respiratory, gastrointestinal, hepatic, renal, endocrine and immunological systems; presentation and aetiology of common conditions affecting those systems across the lifespan; diagnostic and treatment regimes and outcomes relevant to those systems; pertinent medical terminology and medical case note reporting. Students should reasonably expect to devote additional private contact hours of at least 3 times more than the stipulated class contact hours. Practical sessions have a hurdle requirement of at least 80% attendance.

Credit Points: 8

Learning Outcomes: On successful completion of this unit, it is expected that students will be able to:

- Describe the key milestones indicative of normal infant and childhood development;
- Briefly describe typical age-related biological changes found in the adolescent and young, middle-aged, older-aged and frail-aged adult;
- Describe the signs and symptoms of common conditions and diseases affecting the cardiovascular, respiratory, gastrointestinal, hepatic, renal, endocrine and immunological systems;
- Describe the pathophysiology and immunology of common conditions and diseases affecting the cardiovascular, respiratory, gastrointestinal, hepatic, renal, endocrine and lymphatic systems;
- State the routine clinical laboratory, radiology and other functional tests for common conditions and diseases affecting the cardiovascular, respiratory, gastrointestinal, hepatic, renal, endocrine and lymphatic systems;
- List classes of drugs and other treatment modalities used for common conditions and diseases affecting the cardiovascular, respiratory, gastrointestinal, hepatic, renal, endocrine and immunological systems;
- Predict the typical outcomes, with and without treatment, of common conditions and diseases affecting the cardiovascular, respiratory, gastrointestinal, hepatic, renal, endocrine and immunological systems;

RMB2911 PATHOPHYSIOLOGY 2

Locations: St Albans,

Pre-requisites: RMB1518 Human Physiology 1 and RMB1528 Human Physiology 2.

Descriptions: This subject aims to provide students with an understanding of the function, control and coordination of the cardiovascular, respiratory and renal systems. The subject will examine cardiac, pulmonary and renal function and normal circulatory, respiratory and renal dynamics. An overview of the coordination of these systems will be achieved through an examination of the mechanisms involved in maintaining fluid and electrolyte balance, including the role of membrane structures and capillary dynamics, and the integration of neural, endocrine function in the control of cardiovascular, respiratory and renal systems. Homeostatic control of the cardiac, pulmonary and renal systems will also be examined by investigating their responses to stressors, including exercise, high altitude, increased temperature, spaceflight and aging.

Credit Points: 12

Learning Outcomes: To be advised.

Class Contact: Four hours per week for one semester comprising three hours of practical and/or tutorial per week.


Assessment: Semester examination, 60%; practical reports, 20%; assignment, 20%.
• Outline the basic epidemiology of common conditions and diseases affecting the cardiovascular, respiratory, gastrointestinal, hepatic, renal, endocrine and immunological systems;

• Demonstrate development of attributes in effective problem solving and clinical reasoning; information management and processing; communication skills; independent and collaborative empowerment; and appropriate social and cultural awareness and responsiveness.

Class Contact: Six hours per week or equivalent for one semester comprising lectures, tutorials and practicals. Students should reasonably expect to devote additional private contact hours of at least three times more than the stipulated class contact hours.


Assessment: Participation in practical sessions with at least 80% attendance unless well-documented acceptable reasons are provided (hurdle requirement); two assignments (1500 words each) (20% each); one 3-hour examination (60%). This unit is a hurdle requirement.

RBM2912 PATHOPHYSIOLOGY 2

Locations: St Albans,

Pre-requisites: RBM2911 Pathophysiology 1; or equivalent

Descriptions: Emphasis on fundamental pathophysiological processes affecting body and cellular systems; introduction to acute and chronic conditions and common and rare disease profiles affecting the reproductive, urogenital, nervous, skin and musculoskeletal systems; presentation and ontolgy of common conditions affecting those systems across the lifespan; diagnostic and treatment regimes and outcomes relevant to those systems; skills for communicating with special patient groups; pertinent medical terminology and medical case note reporting. Students should reasonably expect to devote additional private contact hours of at least 3 times more than the stipulated class contact hours. Practical sessions have a hurdle requirement of at least 80% attendance.

Credit Points: 8

Learning Outcomes: On successful completion of this unit, it is expected that students will be able to:

• Describe the signs and symptoms of common conditions and diseases affecting the reproductive, urogenital, nervous, skin and musculoskeletal systems;

• Describe the pathophysiology and immunology of common conditions and diseases affecting the reproductive, urogenital, nervous, skin and musculoskeletal systems;

• Describe the main types of commonly-presenting cancers, and outline the cancer staging and descriptors currently in use;

• Outline the characteristic presentations of and pathophysiological explanations for common psychiatric and common degenerative conditions;

• State the routine clinical laboratory, radiology and other functional tests for common conditions and diseases affecting the reproductive, urogenital, nervous, skin and musculoskeletal systems;

• List classes of drugs and other treatment modalities used for common conditions and diseases affecting the reproductive, urogenital, nervous, skin and musculoskeletal systems;

• Predict the typical outcomes, with and without treatment, of common conditions and diseases affecting the reproductive, urogenital, nervous, skin and musculoskeletal systems;

• Outline best practice western medicine communications skills when talking with people who are dying or have a psychiatric condition;

• Outline the basic epidemiology of common conditions and diseases affecting the reproductive, urogenital, nervous, skin and musculoskeletal systems;

• Demonstrate development of attributes in effective problem solving and clinical reasoning; information management and processing; communication skills; independent and collaborative empowerment; and appropriate social and cultural awareness and responsiveness.

Class Contact: Six hours per week or equivalent for one semester comprising lectures, tutorials and practicals. Students should reasonably expect to devote additional private contact hours of at least three times more than the stipulated class contact hours.


Assessment: Participation in practical sessions with at least 80% attendance unless well-documented acceptable reasons are provided (hurdle requirement); two assignments (1500 words each) (20% each); one 3-hour examination (60%). This unit is a hurdle requirement.

RBM3061 EPIDEMIOLOGY

Locations: St Albans,

Pre-requisites: RBM2061 - OCCUPATIONAL HYGIENE SCIENCE OR equivalent subjects OR Completion of Level 1 BSc Biomedical Sciences (or equivalent)

Descriptions: This unit will introduce basic concepts of epidemiology. Some statistics will be covered. - Asking a question - what information do you need?, designing a study, testing hypotheses, designing forms and questionnaires for studies, setting up the data file, summarising data, from sample to population, testing hypotheses about independence, testing hypotheses about dependence, measuring association.

The subject topics will describe types of epidemiological study, the research design and the advantages and disadvantages of each study type and covers the measurement of indicators of disease. Other topics covered include reviewing studies that show the causative factors relating to specific diseases; measurement of the association between causative factors and disease; the advantages and disadvantages of different types of epidemiological study; epidemiological findings to show the degree of risk associated with exposure to specific hazards in industry; and the impact of chance, bias and confounding on findings of epidemiological studies.

Credit Points: 12

Learning Outcomes: To be advised.

Class Contact: Two-hour lecture and one hour tutorial equivalents delivered online per week for one semester.


Assessment: Assignment, tutorial topic questions and test

RBM3161 TOXICOLOGY

Locations: St Albans,

Pre-requisites: RBM2061 Occupational Hygiene Science (or an equivalent subject) OR RBM2530 Pathophysiology 1 (or equivalent)

Descriptions: Topics covered in this subject include mechanisms of action, biotransformation pathways and metabolic bioactivation, toxicokinetics and protection of cellular toxicity by antioxidants. Descriptions of genotoxins, teratogens and carcinogens are included with topics showing specific organ toxins.

Credit Points: 12
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Learning Outcomes: To be advised.

Class Contact: Two hour online lecture and one hour tutorial equivalents delivered online per week for one semester.


Assessment: Based on assignments, tutorial topic questions and essays.

RBM3261 RISK MANAGEMENT

Locations: St Albans,

Pre-requisites: RBM2261 Public and Environmental Health (or equivalent)

Descriptions: The terms of risk analysis are specifically defined to show that risk this is a process of risk assessment as well as risk management. For risk management the risk aversion and risk assessment need to be qualified as being distinct from risk assessments that are more quantified. With regard to risk management there are economic - to include the more valuable, beneficial, cost effective, activities; personal - try to avoid those activities which you did not prefer and; communal - what is done is consistent with what the community expects (risks in the case of risk management). These definitions levels are examined in this subject.

Credit Points: 12

Learning Outcomes: To be advised.

Class Contact: Two hour lecture and one hour tutorial equivalents delivered online per week for one semester.


Assessment: Based on assignments, tutorial topic questions

RBM3264 ADVANCED NERVE AND MUSCLE PHYSIOLOGY

Locations: Footscray Park,

Pre-requisites: RBM2800 Cardiorespiratory and Renal Physiology or equivalent

Descriptions: The aim of the unit is to examine in detail the mechanisms of nerve and muscle function. Topics include: physico-chemical principles underlying nerve and muscle function; behaviour of excitable cells; mechanisms of muscle contraction; neural influences over muscles and muscle fibre types; muscle fibre recruitment; metabolic processes in active muscle; neuromuscular fatigue; co-ordinating motor activity, and diseases of the nervous and muscular systems. Research techniques in nerve and muscle physiology.

Credit Points: 12

Learning Outcomes: To be advised.

Class Contact: Two hours of lectures, one hour tutorial and three hours of practical work each week for one semester.

Required Reading: Nerve and muscle physiology section of any basic physiology textbook.

Assessment: Based on laboratory reports, tutorial assignments and an end-of-semester examination.

RBM3361 OCCUPATIONAL HEALTH AND SAFETY PROJECT

Locations: St Albans,

Pre-requisites: RBM2361 Safety Practice OR Completion of level 2 Biomedical Sciences (or equivalent)

Descriptions: This unit is based on setting up, conducting and successfully completing, an occupational health and safety project. Methodologies in ergonomics, incident investigation, occupational hygiene, risk analysis and management, system safety etc., are demonstrated through problem formulation and problem definition, project management, publication of project outcomes.

Credit Points: 12

Learning Outcomes: To be advised.

Class Contact: One hour lecture and case study tutorial equivalents delivered online per week for the first half of a semester. The final half of the semester will concern student completion of their project reports.


Assessment: Based on tutorial topic questions assignments and a project report (50%).

RBM3462 WORKPLACE PLACEMENT B

Locations: St Albans,

Pre-requisites: RBM2361 Safety Practice

Descriptions: This placement will allow students to undertake a structured work experience in risk management. Within their workplace(s) they need to show practical understanding of risk prevention strategies based on safety, science and management knowledge and skills, that are deployed at a higher management level than for the unit Workplace Placement A, in industry(ies).

Credit Points: 12

Learning Outcomes: The outcomes from studying this unit will be that students demonstrate their understanding of OHS inspections and audits in managing occupational health and safety systems. Students will have gained experience in managing OHS through communication, attending committees, training and management and monitoring of these processes as well as workplace hazards and risks.

Class Contact: Attend for a minimum of 84 hours in a designated workplace(s).


Assessment: P3, I2, W1, A2, D3 Assessment will be based on applied understanding or OHSMS in the workplace(s).

RBM3550 GROWTH AND EARLY DEVELOPMENT

Locations: St Albans,

Pre-requisites: RBM2540 Pathophysiology 2 or equivalent.

Descriptions: This subject builds on the work of first and second year Human Bioscience. The overall concept to be studied is the process of human development and aging and the physiological and pathological changes that occur throughout the life cycle. This subject presents the major regulating systems of the body and thus involves advanced study in the areas of neurological, hormonal and reproductive changes. Life stages from the embryo to senescence will be studied and environmental, societal, psychological and cultural influences will also be discussed. The subject allows exposure to a range of scientific techniques through the laboratory component and may include a minor project.

Credit Points: 12
RBM3560 GROWTH, DEVELOPMENT AND AGING

Locations: St Albans,
Pre-requisites: RBM3550 Growth and Early Development or equivalent.

Descriptions: This unit continues on the theme of human development and ageing and the physiological processes that occur, building on RBM3550 Growth and Early Development. This includes the exploration of changes that occur throughout the life cycle and interaction with the environment. The subject allows exposure to a range of scientific skills and techniques through the laboratory/workshop component and includes a minor project.

Credit Points: 12

Learning Outcomes: At the completion of this unit, students should be able to:

- describe the anatomical and physiological changes that occur as the body ages including major diseases;
- describe the inter relationship between individual behaviours, life experience, environmental, psychosocial and cultural factors which affect development, health, well being, life satisfaction and aging,
- be introduced to various scientific techniques and methodologies through reading and practise, including research design and ethical consideration.

Further, laboratory, workshop and group activities will support the development and refinement of GRADUATE CAPABILITIES through completion of exercises designed, including a minor project, to foster effective communicative, organisational, problem solving, and teamwork skills, evaluative, reflective & critical scientific thinking.

Class Contact: To be advised.

Required Reading: A selection of readings compiled by the lecturers. Class Contact Hours Five hours per week, comprising two to three hours of lectures and up to three hours of workshop/laboratory/tutorial work per week.

Assessment: Examination 55% and project/practical work 45%. Students are required to obtain a satisfactory grade in all components of the assessment to obtain a pass grade.

RBM3590 ADVANCED EXPERIMENTAL TECHNIQUES

Locations: St Albans,
Pre-requisites: RBM2800 Cardiorespiratory and Renal Physiology.

Descriptions: This unit introduces students to a variety of experimental techniques and the role they play in medical research. There will be a particular emphasis on students receiving practical skills in a laboratory setting. Students will obtain skills in animal surgery, sterile technique, tissue sampling, preparation of fixed and frozen sections for light and electron microscopy, basic tissue staining, immunohistochemistry, electrophoresis and PCR. This unit is recommended for students wishing to complete a laboratory based RBM3910 Project in semester 2 and a laboratory based RBM4000 Honours project.

Credit Points: 12

Learning Outcomes: On successful completion of this unit, it is expected that students will be able to:

- design novel experiments to test scientific questions, collect and analyse data, interpret findings, and make conclusions.
- dress in surgical attire and perform a sterile operation on a rat.
- collect, process and section tissue samples for light and electron microscopy.
- use immunohistochemistry to localise proteins in tissue sections.
- use fluorescence to measure metabolites in muscle cells.
- use electrophoresis and PCR to measure gene expression.

Class Contact: To be advised.

Required Reading: A selection of readings compiled by the lecturer. Class Contact Hours Five hours per week for one semester comprising two hours of lectures and three hours of practicals

Assessment: Grant application 40%, Journal article 20%, assignment 20%, laboratory reports 20%.

RBM3610 BIOMEDICAL SCIENCE, ETHICS AND VALUES

Locations: St Albans,
Pre-requisites: Successful completion of a full first year of tertiary study and appropriate subject(s) in human biology or psychology at second year tertiary level.

Descriptions: Students will be introduced to ethical practice in animal and human research, incorporating the various policies and codes of practice for conducting research within Victoria University. This subject discusses, with examples, how scientists have investigated the functioning of the human body in health and disease: in-vitro experiments, forced or voluntary participation in experimentation, the use of animal models etc. The ethics of these practices are examined - how do we justify or choose the practices which elucidate the function of the human body? Who regulates the conduct of research? Can research into humans be objective and is objectivity a gendered concept? Issues arising from the practice of biomedical sciences will be examined, such as in-vitro fertilisation, the human genome project, genetic screening, competition and fraud, and toxicity testing. Reference may also be made to ethical practice in sociological and psychological research. The selected topics may vary as appropriate.

Credit Points: 12

Learning Outcomes: To be advised.

Class Contact: Four hours per week comprising two one hour lectures and one two hour tutorial/seminar session for one semester.


Assessment: One essay, 30%; one VU animal or human ethics proposal 30%, one tutorial presentation/debate, 25%; tutorial attendance and participation, 15%.

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RBM3630 SCIENCE, MEDIA AND COMMUNICATION

Locations: St Albans,
Pre-requisites: ACC1047 Culture and Communication; ACC1043 Communications B or equivalent.

Descriptions: In this subject, students will be introduced to the forms by which information about biomedical sciences and health is communicated via the media. A critical understanding will be developed of the ways in which media information is used to persuade individuals about the value or otherwise of biomedical information to market products and influence behaviour will be examined with particular attention paid to the marketing of pharmaceutical products, medical practice, health education programs and complementary therapies. Students will examine materials such as newspapers, popular magazines concerned with health, health education material and examples of the scientific reports of public institutions concerned with the biomedical sciences.

Credit Points: 12
Learning Outcomes: To be advised.
Assessment: Assignment, 40%; class presentation, 20%; media scrapbook and critical journal, 40%.

RBM3640 ADVANCED NEUROSCIENCES

Locations: St Albans,
Pre-requisites: RBM2530 Pathophysiology.

Descriptions: This unit aims to provide insights into the most important current ideas in the study of neuroanatomy, neurophysiology and developmental neurobiology. This subject provides an advanced series of lectures in specialised areas of neuroscience research. The content of the subject may vary with the expertise and research interests of the lecturing staff.

Credit Points: 12
Learning Outcomes: To be advised.
Class Contact: Four hours of lectures per week for one semester
Required Reading: Various scientific journals
Assessment: Theory examination 55%, practical examination/assignment 45%
use of monoclonal antibodies. The subject will be explored as a basic science with applications in the agriculture industry, food science, environmental science and medical science.

Credit Points: 12

Learning Outcomes: To be advised.

Class Contact: Six hours per week comprising three hours of lectures and three hours of laboratory/tutorial work for one semester.

Required Reading: Raitt, I.M., Brostoft, J. and Male, D.K. 1993, Immunology, 3rd edn, Mosby, St Louis.

Assessment: Assignments, 20%; practical work, 30%; final examination, 50%.

RBM3800 PHARMACOLOGY

Locations: St Albans,

Pre-requisites: RBM2560 Medical Biochemistry and RBM2540 Pathophysiology 2, or equivalent units.

Descriptions: The unit begins with an introduction to the general principles of pharmacokinetics and pharmacodynamics. A wide range of drug groups will then be studied with attention focused on the pharmacokinetics, pharmacodynamics, clinical uses, and side effects of each drug. Aspects relating to medicinal chemistry, toxicity testing, clinical trials and requirements for the admission of new drugs are covered in topics that relate to new drug development. Pharmacokinetics, pharmacogenetics, sensitivity and resistance to drug therapies are further topics that address variation in drug outcomes. Social drug abuse and types of drug dependence are also discussed in this unit.

Credit Points: 12

Learning Outcomes: On successful completion of this unit, students should be able to:

• explain the general principles of pharmacokinetics and pharmacodynamics
• list the major drug groups used to target the autonomic nervous system and cardiorespiratory system, and understand mechanism of action of each
• name the major drug groups used to target the blood, kidney, gastrointestinal system, and endocrine system, and explain the mechanism of action
• name the major groups of chemotherapeutic agents and anti-microbials and describe the mechanism of action
• describe the principles of psychopharmacology
• provide examples and understand the mechanism of action of anaesthetics, analgesics, and anti-inflammatory drugs
• describe processes involved in new drug development and requirements for the admission of new drugs.

Class Contact: To be advised.


Assessment: Presentation 10%; Practical reports 20%; Online tests 20%; Examination 50%.

RBM3810 WELLNESS 1

Locations: St Albans,

Pre-requisites: RBM2530 Pathophysiology 1 and RBM2540 Pathophysiology 2 or equivalent, or RBM2800 Cardiorespiratory and Renal Physiology plus other relevant second year units at the discretion of the co-ordinator.

Descriptions: Module A: This unit introduces the concepts of mind, body and spirit. These areas are explored from psychological, physiological, philosophical and sociological perspectives. Current literature will be used to introduce the areas of psychophysiology and psychoneuroimmunology and their connections to the mind/body/spirit paradigm. The ethics of human research and evaluation will be discussed throughout the series of lectures. In addition, students will be introduced to basic methods of information gathering with respect to the mind-body-spirit paradigm including the evaluation of its status in individuals. Further, aspects of psychophysiology and psychoneuroimmunology such as stress and disease, sexuality and the impact of environment on the health of the mind, body and spirit are examined. Current research literature in the area will be analysed. Module B: Students will be introduced to fundamental concepts of health and wellness. The difference between professional/scientific concepts and lay concepts will be explored. Wellness promotion will be presented primarily in the context of established public health approaches utilised in health education, promotion and prevention including medical, behavioural, educational, social and empowerment strategies. Some of the dilemmas and pitfalls in health promotion will be canvassed. Students will also be introduced to base concepts of occupational health and safety and workplace health promotion. Risk assessment, material safety, manual handling and relevant legislation will be discussed. Context will be provided by guest speakers from relevant organisations.

Credit Points: 12

Learning Outcomes: To be advised.

Class Contact: Module A: Three hours per week for one semester, comprising two hours of lectures and one hour of tutorial. Module B: Three hours per week for one semester comprising one and a half hours of lectures and one and a half hours tutorial/seminar.


Assessment: Assignment/tutorial work, 25%; examination, 25% for each of Module A and B.

RBM3820 WELLNESS 2

Locations: St Albans,

Pre-requisites: RBM3810 Wellness 1.

Descriptions: Module A: The unit extends the material covered with respect to Mind, Body and Spirit, and explores complimentary therapies, techniques, treatments and strategies that are used to promote and maintain health and well-being as well as treat disease.

Module B: Students will be introduced to the systematic planning of health and wellness education and promotion. Examples and discussion will be provided in the context of relevant issues, for example, community participation, the role of professionals, young people and STD’s/AIDS, alcohol use, and the role of the media in health. Guest speakers from health-promoting organisations will be provided to explore health education and promotion issues. Examples include the local government planning process/healthy cities approach, Alzheimers Disease, Eating disorders and the Quit campaign. Other relevant speakers/issues may be discussed as appropriate. An individual health promotion project within the unit requires students to assess their own health/wellness needs, then design, implement and evaluate an appropriate program for themselves over the semester. Students are further encouraged to take the third year project in conjunction with this unit, and to apply their skills to the development of the project as a health promotion and education exercise oriented to the workplace or conducted within an organisation that promotes health.

Credit Points: 12

Learning Outcomes: To be advised.

Class Contact: Module A: Three hours per week for one semester, comprising two hours of lectures and one hour of tutorial. Module B: Three hours per week for one
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semester comprising one and a half hours of lectures and one and a half hours tutorial/seminar.


Assessment: Assignment/tutorial work, 30%; examination, 20% for each of Module A and B.

RBM3850 NUTRITIONAL THERAPEUTICS C

Locations: St Albans,

Pre-requisites: RBM2850 and RBM2855 Nutritional Therapeutics A and B. RBM2540 Pathophysiology 2

Descriptions: Diet, novel and common food supplementation support for the following - energy metabolism dysfunction, neurological dysfunction, behavioural disorders, life threatening illnesses; laboratory testing for system dysfunction; formulation and costing of supplementation programs to meet patient needs; regulation and boundaries when working with practitioners who treat patients with life threatening illnesses; Analysis of patient follow-up and reformulation of treatment protocols where required.

Credit Points: 12

Learning Outcomes: To be advised.

Class Contact: Four hours per week for one semester comprising two hours lecture, two hours tutorial/workshop.


Assessment: Examination (3 hours), 50%; case history, 50%.

RBM3855 NUTRITIONAL THERAPEUTICS D

Locations: St Albans,

Pre-requisites: Completion of 2nd year; RBM 3850 Nutritional Therapeutics C. RBM2540 Pathophysiology 2

Descriptions: Diet, novel and common food supplementation support, laboratory testing for system dysfunction, formulation and costing of supplementation programs to meet patient needs: Analysis of patient follow-up and reformulation of treatment protocols.

Credit Points: 12

Learning Outcomes: To be advised.

Class Contact: Four hours per week for one semester comprising two hours lecture, two hours tutorial/workshop.


Assessment: Examination (3 hours), 50%; case history, 50%.

RBM3910 PROJECT

Locations: Werribee, Footscray Park, St Albans,

Pre-requisites: Successful completion of the second year of the Biomedical Sciences degree

Descriptions: Third year student projects provide students with an opportunity to select and undertake either (a) a brief research project in an area of interest with members of the Biomedical Sciences staff; or (b) a work-based placement in the industry he/she intends to enter. Both the research and work-based placements enable the student to undertake a structured work experience program as an integral part of their degree course. Gaining practical experience in their chosen field enables students to test interest and ability in these areas. Selection The number of Project places will be limited by the number of available projects. Places will be allocated on the basis of academic merit. It would be expected that students wishing to do Project would have a Credit average and be in their final semester of the course.

Credit Points: 12

Learning Outcomes: To be advised.

Class Contact: Six hours per week for one semester comprising laboratory work or work-based placement

Required Reading: Selected material as advised by the project supervisor

Assessment: Project Presentation and Report 100%
• Explain the types and mechanisms of adverse reactions to drugs and outline the management of drug-related adverse outcomes and other emergencies;
• Explain the appropriate use of antidotes;
• Explain the drugs and poisoning schedule as it applies in Australia;
• State the reporting procedures for adverse drug and drug/herb outcomes;
• Identify pharmacological conditions warranting referral to other health professionals;
• Use reference materials and information services to obtain information on drugs;
• Demonstrate development and consolidation of attributes in effective problem solving and clinical reasoning; information management and processing; communication skills; independent and collaborative empowerment; and appropriate social and cultural awareness and responsiveness.

Class Contact: Six hours per week or equivalent for one semester comprising lectures, tutorials and practicals. Students should reasonably expect to devote additional private contact hours of at least three times more than the stipulated class contact hours.


Assessment: Participation in practical sessions with at least 80% attendance unless well-documented acceptable reasons are provided (hurdle requirement); two assignments (1500 words each) (20% each); one 2-hour examination (60%). This unit is a hurdle requirement.

RBM3922 WESTERN MEDICAL DIAGNOSES AND INTERVENTIONS 2

Locations: St Albans,

Pre-requisites: RBM3921 - WESTERN MEDICAL DIAGNOSIS AND INTERVENTIONS 10R equivalent.

Descriptions: Development of material covered in pathophysiology, with particular emphasis on the identification of potentially life-threatening acute and chronic conditions that warrant referral. Knowledge of the main clinical laboratory tests and western medical treatment techniques; indications, contra-indications and complications of diagnostic and screening procedures; interpretation of clinical results and reliability of clinical tests. The use of the stethoscope, sphygmomanometer, otoscope, ECG, organ palpation and knowledge of other investigative procedures including contemporary imaging and laboratory procedures employed by health care professionals. A standardized systems approach to western medical history taking and case note recording and interpreting, with emphasis on conditions presenting in the CM clinical specialties. Social, cultural and interpersonal factors that impact on the clinical interview and physical examination, and best practice western communications strategies that mentally prepare patients for clinical laboratory tests and minor medical procedures. Students should reasonably expect to devote additional private contact hours of at least 3 times more than the stipulated class contact hours. Practical sessions have a hurdle requirement of at least 80% attendance.

Credit Points: 6

Learning Outcomes: On successful completion of this unit, it is expected that students will be able to:
• Explain the principles of western medical history taking and western physical examination techniques;
• Discuss key social, cultural and demographic factors that impact in health care, and outline the factors, including interpersonal, that need to be considered in the clinical interview;
• Conduct interviews sufficient to record western medical case notes in a legal (legible, accurate, orderly) manner;
• Accurately record medical histories as western medical case notes, using accepted abbreviations and format, e.g., POMR;
• Explain the processes and issues involved in specific physical examinations;
• Conduct examination procedures in a way to minimize patient distress, embarrassment and risk of injury;
• Demonstrate skilful use of standard western diagnostic instruments, e.g., stethoscope, sphygmomanometer, otoscope, and palpate organs to proficiency standards acceptable in CM clinics;
• Outline best practice western communications strategies that mentally prepare patients for clinical laboratory tests and minor medical procedures;
• List common and routine diagnostic and screening tests conducted in haematology, serology, biochemistry, microbiology and pathology laboratories, and explain the indications and any contraindications of these clinical laboratory tests;
• Distinguish amongst reference, normal, clinical and abnormal values on clinical laboratory reports;
• Explain the principles of interpreting clinical laboratory results and interpreting the reliability (accuracy, precision, specificity, sensitivity) of clinical laboratory tests;
• Define terminology commonly used in radiology and x-ray reports, and explain the clinical significance of those terms;
• Explain the clinical indications for requesting specialised clinical laboratory tests and radiographic procedures such as contrast, Doppler, tomographic and labelling techniques;
• Apply the basic principles of radiographic interpretation to diagnostic images of normal and pathological anatomy;
• Use appropriate terminology when referring to findings on radiographic and other imaging procedures;
• Identify conditions warranting referral to other health professionals;
• Demonstrate development and consolidation of attributes in effective problem solving and clinical reasoning; information management and processing; communication skills; independent and collaborative empowerment; and appropriate social and cultural awareness and responsiveness.

Class Contact: Six hours per week or equivalent for one semester comprising lectures, tutorials and practicals. Students should reasonably expect to devote additional private contact hours of at least three times more than the stipulated class contact hours.


Assessment: Participation in practical sessions with at least 80% attendance unless well-documented acceptable reasons are provided (hurdle requirement); two assignments (1500 words each) (20% each); one 2-hour examination (60%). This unit is a hurdle requirement.


**RBM3950 NUTRITIONAL THERAPY IN PRACTICE 1**

**Locations:** St Albans,

**Pre-requisites:** HHN0021 Counselling Skills for Natural Therapies. RBM2540 Pathophysiology 2

**Descriptions:** Nutritional treatment for patients at critical life stages; managing patients with challenging nutritional and behavioural characteristics, eg addiction, non-compliance, aggression, eating disorders, vulnerable client groups; ethical dilemmas in clinical practice; patient record keeping.

**Credit Points:** 12

**Learning Outcomes:** To be advised.

**Class Contact:** Minimum of 90 hours supervised clinical practice.


**Assessment:** Examination (3 hours), 50%; case history, 50%.

**RBM3955 NUTRITIONAL THERAPY IN PRACTICE 2**

**Locations:** St Albans,

**Pre-requisites:** RBM3950 Nutritional Therapy in Practice 1; RBM3850 Nutritional Therapeutics C. RBM2540 Pathophysiology 2

**Descriptions:** Nutritional treatment for patients at critical life stages, managing patients with challenging nutritional and behavioural characteristics, eg addiction, non-compliance, aggression, eating disorders, vulnerable client groups; ethical dilemmas in clinical practice; patient record keeping.

**Credit Points:** 12

**Learning Outcomes:** To be advised.

**Class Contact:** Minimum 90 hours supervised clinical practice.


**Assessment:** Examination (3 hours), 50%; case history, 50%.

**RBM3960 NUTRITIONAL FRONTIERS**

**Locations:** St Albans,

**Pre-requisites:** Satisfactory completion of year 2 SBNT, or equivalent

**Descriptions:** Advances in nutrition research in selected topics, including cardiovascular, metabolic, mental, reproductive and public health, cancer, infectious disease and nutrigenomics. Evidence for and against the effectiveness of various therapies and non-invasive solutions.

**Credit Points:** 12

**Learning Outcomes:** On successful completion of this unit, it is expected that students will be able to:

- Evaluate recent research in the area of nutrition.
- Monitor and evaluate nutritional therapies in a clinical setting.

**Class Contact:** Four hours per week for one semester comprising two hours of lectures, two hours of tutorials/seminars.

**Required Reading:** Current nutrition scientific journals.

**Assessment:** Two essays (2500 words each) 50% total; one 2-hour examination (50%).

**RBM3970 OPERATING A CLINICAL PRACTICE**

**Locations:** St Albans,

**Pre-requisites:** Nil.

**Descriptions:** Factors in establishing and operating a clinical practice; legal, professional and insurance issues, including personal and professional indemnity and OHS regulations; business banking and accountancy, including taxation laws and essential business record keeping and reporting requirements; basic marketing techniques; codes of ethics and practice; using media in practice; to find appropriate employment.

**Credit Points:** 12

**Learning Outcomes:** To be advised.

**Class Contact:** Four hours per week for one semester comprising two hours lecture, two hours workshop.


**Assessment:** Examination (3 hours), 40%; assignment 2500 words each, 40%; written application and interview, 20%.

**RBM4001 SCIENCE HONOURS 1**

**Locations:** Footscray Park, St Albans,

**Pre-requisites:** Satisfactory completion of an undergraduate degree program with a credit average (65%) in the final year, or at the discretion of the Course Co-ordinator.

**Descriptions:** The Honours program consists of a research project and coursework. The research project will be undertaken in one of the research areas of the School of Biomedical Sciences and may, subject to approval, be undertaken at an external location. The coursework components cover a range of information including advanced areas of medical research, literature analysis and critical appraisal, ethics in research, scientific writing, oral presentation, methodological techniques, experimental design, statistics, data analysis, computer applications and software data presentation. The literature review will provide the scientific background and rationale for the research project, while the experimental design will provide the methodology to be applied in the research project.

**Credit Points:** 48

**Learning Outcomes:** To be advised.

**Class Contact:** No formal contact hours, although a normal fulltime load is considered a minimum of 20 hours per week. Regular meetings with the supervisor are recommended.

**Required Reading:** To be advised by the supervisor and searched by student as part of research training.

**Assessment:** The nature of the coursework assessment will vary and may be based on written assignments, seminar presentations and a written statistics or experimental design examination. The research project assessment will consist of a written literature review, an oral presentation and submission of an experimental design.
RBM4002 SCIENCE HONOURS 2

Locations: Footscray Park, St Albans,

Pre-requisites: Satisfactory completion of an undergraduate degree program with a credit average (65%) in the final year, or at the discretion of the Course Co-ordinator.

Descriptions: The Honours program consists of a research project and coursework. The research project will be undertaken in one of the research areas of the School of Biomedical Sciences and may, subject to approval, be undertaken at an external location. Students will conduct a research project under supervision. The project will comprise a novel scientific investigation in an area of expertise of the project supervisor. The results of the project will be reported in an oral presentation and a written thesis, which will include an introduction, a description of methodology, results, a discussion of the results (including a critical appraisal of the results) and recommendations for further research in the area.

Credit Points: 48

Learning Outcomes: To be advised.

Class Contact: No formal contact hours, although a normal fulltime load is considered a minimum of 20 hours per week. Regular meetings with the supervisor are recommended.

Required Reading: To be advised by the supervisor and searched by student as part of research training

Assessment: The research project will be assessed on the oral presentation and the quality of the research and its presentation in the written thesis as well as the ability to answer questions regarding the research work undertaken.

RBM4923 WESTERN MEDICAL DIAGNOSES AND INTERVENTIONS 3

Locations: St Albans,

Pre-requisites: RBM3922 - WESTERN MEDICAL DIAGNOSES AND INTERVENTIONS 2 or equivalent

Descriptions: Development of material covered in pathophysiology with particular emphasis on the identification of potentially life-threatening acute and chronic conditions presenting in western medical gastroenterology, urology, rheumatology, dermatology and orthopaedics. An understanding of advanced clinical laboratory, imaging and functional tests and complex diagnostic techniques; reinforcement of skills in using the stethoscope, sphygmomanometer, otoscope, organ palpation and other procedures used by health care professionals. A multi-systems approach is used to present a western medical emphasis on conditions presented in the CM clinical specialties. Students should reasonably expect to devote additional private contact hours of at least 3 times more than the stipulated class contact hours. Practical sessions and workshops have a hurdle requirement of at least 80% attendance. This unit may be delivered in its entirety in burst mode to allow students the opportunity to undertake their VU-approved final clinical internship.

Credit Points: 8

Learning Outcomes: On successful completion of this unit, it is expected that students will be able to:

- Evaluate differences amongst western and Chinese medical approaches to acute and chronic health problems;
- Distinguish amongst western and Chinese medical treatment and management regimes in terms of the diagnosis of gastrointestinal, renal, urogenital, musculoskeletal, immunological and skin conditions;
- Explain within a contemporary western medical framework, the presentation, investigations, diagnosis, aetiology, treatment options and management of patients with common acute and chronic conditions typically presenting at western medical gastroenterology, urology, rheumatology, dermatology and orthopaedics clinics;
- Demonstrate skilful use of relevant diagnostic equipment, including the use of the stethoscope, sphygmomanometer, otoscope, and organ palpation and other region-specific procedures;
- Explain the features and applications of typical invasive and non-invasive western medicine techniques, such as EKG, echocardiography, angiography, lung function, CT scan, MRI, reflux tests, barium meal, barium enema, endoscopy, colonscopy, laparoscopy, liver function tests, biopsy, radio-active implants, radio-tracing;
- Explain, in plain English and in professional language, the need for routine and advanced clinical laboratory, imaging and functional tests of, and complex diagnostic procedures on the gastrointestinal, renal, urogenital, musculoskeletal, immunological and integumentary systems;
- Discriminate amongst conditions warranting routine and urgent referral to medical practitioners and other health professionals;
- Communicate orally and in writing, in plain English and in professional language, the need for a patient referral to any of the western medical specialist clinics in gastroenterology, urology, rheumatology and orthopaedics;
- Demonstrate development and consolidation of attributes in effective problem solving and clinical reasoning; information management and processing; communication skills; independent and collaborative empowerment; and appropriate social and cultural awareness and responsiveness.

Class Contact: The equivalent of 72 hours for one semester comprising lectures, tutorials and practicals. Practical sessions have a hurdle requirement of at least 80% attendance.


Assessment: Participation in practical sessions with at least 80% attendance unless well-documented acceptable reasons are provided (hurdle requirement); two assignments (2500 words each) (20% each); one 3-hour examination (60%). This unit is a hurdle requirement.

RBM4924 WESTERN MEDICAL DIAGNOSES AND INTERVENTIONS 4

Locations: St Albans,

Pre-requisites: RBM4923 Western Medical Diagnoses and Interventions 3; Or Equivalent.

Descriptions: Development of material covered in pathophysiology with particular emphasis on the identification of potentially life-threatening acute and chronic conditions. An understanding of advanced pathology tests and complex diagnostic techniques; reinforcement of skills in using the stethoscope, sphygmomanometer, otoscope, organ palpation and other procedures used by health care professionals. Conditions discussed in the CM clinical specialties are presented using a western medicine systems approach. Contemporary medical and psychiatric conditions are included. Students should reasonably expect to devote additional private contact hours of at least 3 times more than the stipulated class contact hours. Practical sessions have a hurdle requirement of at least 80% attendance. This unit may be delivered in its entirety in burst mode to allow students the opportunity to undertake their VU-approved final clinical internship.
Credit Points: 8

Learning Outcomes: To be advised.

Class Contact: Six hours per week or equivalent.


Assessment: Participation in practical sessions with at least 80% attendance unless well-documented acceptable reasons are provided (hurdle requirement); two assignments (2500 words each) (20% each); one 3-hour examination (60%). This unit is a hurdle requirement.

RBM5510 NEURO AND NEUROMUSCULAR DIS FOR EXE REHAB

Locations: Footscray Park,

Pre-requisites: HP65041 Functional Anatomy or equivalent HP65042 Musculo-Skeletal Physiology for Rehabilitation or equivalent

Descriptions: The unit content will include (i) mechanisms of injury and repair in neurological and neuromuscular tissue; (ii) spinal cord and peripheral nerve injuries; (iii) acquired brain injury; (iv) stroke (cerebro-vascular accident); neurological and neuromuscular deficits; (v) multiple sclerosis; (vi) Parkinson’s disease; (vii) muscular dystrophy; (viii) mitochondrial myopathies; (ix) cerebral palsy; (x) ageing; (xi) detrimental effects of long term inactivity and bed rest.

Credit Points: 12

Learning Outcomes: To be advised.

Class Contact: Two hours of lectures per week for one semester.


Assessment: Written assignment (40%); case studies x2 (30% each).

RBM5610 CLINICAL NUTRITION

Locations: Footscray Park,

Pre-requisites: HP65041 Functional Anatomy, or equivalent, HP65017 Cardiorespiratory and Metabolic physiology for Rehabilitation, or equivalent.

Descriptions: Food components, Nutritional assessment, Healthy eating patterns, Sports nutrition. Role of nutrition in: Cardiovascular disease, Diabetes, Obesity, Neuropathy, Musculoskeletal conditions/Mental illness, Chronic obstructive airways disease. Treatment aspects of these conditions. Fad diets

Credit Points: 12

Learning Outcomes: Demonstrated knowledge of the roles of macro and micronutrients, their altered requirements in various pathologies, and appropriate dietary sources. Demonstrated knowledge of appropriate dietary patterns suitable for patients with various conditions and in rehabilitation. Ability to recognize rehabilitation patients requiring referral to nutritional support services.

Class Contact: Two hours lecture or equivalent for one semester.


Assessment: case studies (x 3) each approx. 2000 words, 100 %Supplementary assessment will only be offered if all assessable components have been submitted, and a mark of 40-49% is achieved in all assessable components.

RBM8001 RESEARCH THESIS 1 FULL TIME

Locations: To be advised.

Pre-requisites: To be advised.

Descriptions: This unit of study is part of a research degree program. Information on research topics for the Faculty of Health, Engineering and Science may be found on the faculty website at the following link: http://www.vu.edu.au/Faculties/HealthEngineeringandScience/ResearchandResearchTraining/MajorResearchAreas/ Assessment criteria and Core Research Graduate Attributes can be found on the Office for Postgraduate Research website at the following link: http://www.vu.edu.au/Research/OfficeforPostgraduateResearch/PolicyProcessesandGuidelines/

Credit Points: 48

Learning Outcomes: To be advised.

Class Contact: To be advised.

Required Reading: To be advised.

Assessment: To be advised.

RBM8002 RESEARCH THESIS 2 FULL TIME

Locations: To be advised.

Pre-requisites: To be advised.

Descriptions: This unit of study is part of a research degree program. Information on research topics for the Faculty of Health, Engineering and Science may be found on the faculty website at the following link: http://www.vu.edu.au/Faculties/HealthEngineeringandScience/ResearchandResearchTraining/MajorResearchAreas/ Assessment criteria and Core Research Graduate Attributes can be found on the Office for Postgraduate Research website at the following link: http://www.vu.edu.au/Research/OfficeforPostgraduateResearch/PolicyProcessesandGuidelines/

Credit Points: 48

Learning Outcomes: To be advised.

Class Contact: To be advised.

Required Reading: To be advised.

Assessment: To be advised.

RBM8011 RESEARCH THESIS 1 PART TIME

Locations: To be advised.

Pre-requisites: To be advised.

Descriptions: This unit of study is part of a research degree program. Information on research topics for the Faculty of Health, Engineering and Science may be found on the faculty website at the following link: http://www.vu.edu.au/Faculties/HealthEngineeringandScience/ResearchandResearchTraining/MajorResearchAreas/
Assessment criteria and Core Research Graduate Attributes can be found on the
Office for Postgraduate Research website at the following link: http://www.vu.edu.
au/Research/OfficeforPostgraduateResearch/PolicyProcessesandGuidelines/

Credit Points: 24

Learning Outcomes: To be advised.

Class Contact: To be advised.

Required Reading: To be advised.

Assessment: To be advised.

RBM8012 RESEARCH THESIS 2 PART TIME

Locations: To be advised.

Pre-requisites: To be advised.

Descriptions: This unit of study is part of a research degree program. Information
on research topics for the Faculty of Health, Engineering and Science may be found
on the faculty website at the following link: http://www.vu.edu.au/Faculties/
HealthEngineeringandScience/ResearchandResearchTraining/MajorResearchAreas/
Assessment criteria and Core Research Graduate Attributes can be found on the
Office for Postgraduate Research website at the following link: http://www.vu.edu.
au/Research/OfficeforPostgraduateResearch/PolicyProcessesandGuidelines/

Credit Points: 48

Learning Outcomes: To be advised.

Class Contact: To be advised.

Required Reading: To be advised.

Assessment: To be advised.

RBT8001 RESEARCH THESIS 1 FULL TIME

Locations: To be advised.

Pre-requisites: To be advised.

Descriptions: This unit of study is part of a research degree program. Information
on research topics for the Faculty of Health, Engineering and Science may be found
on the faculty website at the following link: http://www.vu.edu.au/Faculties/
HealthEngineeringandScience/ResearchandResearchTraining/MajorResearchAreas/
Assessment criteria and Core Research Graduate Attributes can be found on the
Office for Postgraduate Research website at the following link: http://www.vu.edu.
au/Research/OfficeforPostgraduateResearch/PolicyProcessesandGuidelines/

Credit Points: 24

Learning Outcomes: To be advised.

Class Contact: To be advised.

Required Reading: To be advised.

Assessment: To be advised.

RBT8011 RESEARCH THESIS 1 PART TIME

Locations: To be advised.

Pre-requisites: To be advised.

Descriptions: Eligibility for entry to a Master of Science or Doctor of Philosophy
program.

This unit of study is part of a research degree program. Information on research
topics for the Faculty of Health, Engineering and Science may be found on
the faculty website at the following link: http://www.vu.edu.au/Faculties/
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Assessment criteria and Core Research Graduate Attributes can be found on the
Office for Postgraduate Research website at the following link: http://www.vu.edu.
au/Research/OfficeforPostgraduateResearch/PolicyProcessesandGuidelines/

Credit Points: 24

Learning Outcomes: To be advised.

Class Contact: To be advised.

Required Reading: To be advised.

Assessment: To be advised.

RBT8012 RESEARCH THESIS - SEM 2 (PART-TIME)

Locations: Werribee,

Pre-requisites: Eligibility for entry to a Master of Science or Doctor of Philosophy
program. This unit of study is part of a research degree program. Information
on research topics for the Faculty of Health, Engineering and Science may be found
on the faculty website at the following link: http://www.vu.edu.au/Faculties/
HealthEngineeringandScience/ResearchandResearchTraining/MajorResearchAreas/
Assessment criteria and Core Research Graduate Attributes can be found on the
Office for Postgraduate Research website at the following link: http://www.vu.edu.
au/Research/OfficeforPostgraduateResearch/PolicyProcessesandGuidelines/

Descriptions: Eligibility for entry to a Master of Science or Doctor of Philosophy
program.

This unit of study is part of a research degree program. Information on research
topics for the Faculty of Health, Engineering and Science may be found on
the faculty website at the following link: http://www.vu.edu.au/Faculties/
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Office for Postgraduate Research website at the following link: http://www.vu.edu.
au/Research/OfficeforPostgraduateResearch/PolicyProcessesandGuidelines/
RCS5172 SOLID WASTE MANAGEMENT

Locations: Footscray Park,
Pre-requisites: Nil.
Descriptions: Nature and sources of solid wastes; hazardous waste handling; incineration; landfills; other disposal alternatives; monitoring and control.
Credit Points: 12
Learning Outcomes: To be advised.
Class Contact: To be advised.
Required Reading: To be advised.
Assessment: To be advised.

REM8001 RESEARCH THESIS 1 FULL TIME

Locations: To be advised.,
Pre-requisites: To be advised.
Descriptions: Eligibility for entry to a Master of Science or Doctor of Philosophy program.
This unit of study is part of a research degree program. Information on research topics for the Faculty of Health, Engineering and Science may be found on the faculty website at the following link: http://www.vu.edu.au/Faculties/HealthEngineeringandScience/ResearchandResearchTraining/MajorResearchAreas/
Assessment criteria and Core Research Graduate Attributes can be found on the Office for Postgraduate Research website at the following link: http://www.vu.edu.au/Research/OfficeforPostgraduateResearch/PoliciesProcesssandGuidelines/
Credit Points: 48
Learning Outcomes: To be advised.
Class Contact: To be advised.
Required Reading: To be advised.
Assessment: To be advised.

REM8002 RESEARCH THESIS 2 FULL TIME

Locations: To be advised.,
Pre-requisites: To be advised.
Descriptions: Eligibility for entry to a Master of Science or Doctor of Philosophy program.
This unit of study is part of a research degree program. Information on research topics for the Faculty of Health, Engineering and Science may be found on the faculty website at the following link: http://www.vu.edu.au/Faculties/HealthEngineeringandScience/ResearchandResearchTraining/MajorResearchAreas/
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Credit Points: 24
Learning Outcomes: To be advised.
Class Contact: To be advised.
Required Reading: To be advised.
Assessment: To be advised.

REM8001 RESEARCH THESIS 1 PART TIME

Locations: To be advised.,
Pre-requisites: To be advised.
Descriptions: Eligibility for entry to a Master of Science or Doctor of Philosophy program.
This unit of study is part of a research degree program. Information on research topics for the Faculty of Health, Engineering and Science may be found on the faculty website at the following link: http://www.vu.edu.au/Faculties/HealthEngineeringandScience/ResearchandResearchTraining/MajorResearchAreas/
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Credit Points: 24
Learning Outcomes: To be advised.
Class Contact: To be advised.
Required Reading: To be advised.
Assessment: To be advised.

REM8002 RESEARCH THESIS 2 PART TIME

Locations: To be advised.,
Pre-requisites: To be advised.
Descriptions: Eligibility for entry to a Master of Science or Doctor of Philosophy program.
This unit of study is part of a research degree program. Information on research topics for the Faculty of Health, Engineering and Science may be found on the faculty website at the following link: http://www.vu.edu.au/Faculties/HealthEngineeringandScience/ResearchandResearchTraining/MajorResearchAreas/
Assessment criteria and Core Research Graduate Attributes can be found on the Office for Postgraduate Research website at the following link: http://www.vu.edu.au/Research/OfficeforPostgraduateResearch/PoliciesProcesssandGuidelines/
Credit Points: 24
Learning Outcomes: To be advised.
Class Contact: To be advised.
Required Reading: To be advised.
Assessment: To be advised.

RMS1171 BIOCHEMISTRY 1 (OSTEOPATHY)

Locations: City Flinders, St Albans,
Pre-requisites: Nil.
Descriptions: Insights into biochemical events that occur in the human body. This includes an overview of nutrients such as proteins, carbohydrates, vitamins and fats, and how nutrients are metabolized. Specific biochemical systems occurring in muscle that will be studied include glycolysis, the tricarboxylic acid (TCA) cycle, oxidative phosphorylation, gluconeogenesis, glycogen and lipid metabolism. Other topics include the biochemistry of allergy and inflammation; nervous system biochemistry;
the extracellular matrix, calcium and bone metabolism. The importance of clinical biochemistry and clinical enzymology will be discussed. Cellular signalling will be dealt with in detail.

**Credit Points:** 6

**Learning Outcomes:** On successful completion of this unit, it is expected that students will be able to:

- Describe various nutrients, and discuss the structures and functions of biological macromolecules and their component subunits;
- Explain how nutrients are metabolized;
- Discuss the importance of clinical biochemistry and the role of clinical enzymology in the diagnosis and prognosis of various diseases in the human body;
- Explain the biological mechanism of inflammation and allergy;
- Define the different types of muscle;
- Use muscle biochemistry to explain muscle contraction and relaxation;
- Outline various metabolic pathways for energy production in muscle;
- Predict and explain the clinical implications resulting from aberrations in pathways or deficits in nutrient intake;
- Describe cellular signalling from intracellular and extracellular perspectives, including the molecules involved.

**Class Contact:** To be advised.


**Assessment:** Tutorial participation (10%); two (2) tests (20% each, total 40%); one 3-hour end-of-semester written examination (50%).

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**RNH2110 DISEASE AND HEALTH**

**Locations:** Werribee,

**Pre-requisites:** Nil.

**Descriptions:** The unit will study inflammatory and immune responses and pathogenic process of common disorders. Inflammatory and immune responses, essentials of the pathologic process of the common disorders with nutritional involvement, including; anaemia, alimentary dysfunction, cardiovascular disease, cancer, obesity, diabetes, inborn errors of metabolism. Diagnostic and therapeutic modalities.

**Credit Points:** 12

**Learning Outcomes:** To be advised.

**Class Contact:** Four hours per week comprising of lecture/tutorial/workshop for one semester.

**Required Reading:** Gould, BE. 1997. Pathophysiology for the Health Related Professions, Saunders, USA.

**Assessment:** Assignment, 40%; final examination, 60%.
SCHOOL OF ENGINEERING AND SCIENCE

Below are details of courses offered by the Faculty of School of Engineering and Science in 2010. This information is also available online on the University’s searchable courses database at www.vu.edu.au/courses

NOTE: Courses available to International students are marked with the (I) symbol.

BACHELOR OF ENGINEERING (ARCHITECTURAL ENGINEERING)
Course Code: EBAE

Campus: Footscray Park

Course Objectives: This program is unique in Australia. Students specialise in the planning, design and construction of building environmental control, life safety or building structural systems. These systems make buildings safe places in which to live and work. The program focuses on sustainable design concepts.

The course is designed to develop vocational skills for the engineering planning, design, construction, maintenance and management of building environmental and safety systems.

The basic objectives of the course are to produce graduates who:

- have a solid foundation of scientific, engineering and project management knowledge coupled by specific theoretical and practical exposure to the design of building environmental and life safety systems;
- have the ability to communicate effectively, both orally and in writing, and work well in a team situation;
- have an understanding of community need for building infrastructure in the context of societal aspirations and expectations;
- are motivated to continually improve their knowledge base; and
- are immediately productive upon completion of the course and are thus attractive to prospective employers.

The first two years of the degree program involves engineering fundamentals to provide a solid foundation for the applied engineering subjects in the following years of the course. Studies in architecture design practices and architectural history are developed in second and third year. These fundamentals provide students with the basis of understanding all developments in the profession of Architectural Engineering and Engineering in general as technology continually changes and the profession undergoes continual adjustment.

The applied engineering subjects building structures, building environmental and life safety systems, and building project management are introduced. In the final two years of the program, students undertake a major in either environmental systems or structural systems design. An optional integrated 12 weeks industry placement period is available in Architectural Engineering at the end of the third year of the course in a ‘summer semester’ subject.

Architectural Engineering graduates will have enhanced skills for careers in:

- advanced environmental services system design;
- building renovation and refurbishment;
- building structures design;
- computer aided design and drawing;
- construction planning, management and project supervision;
- cost estimating and project feasibility;
- building energy audits and conservation studies;
- engineering consultation and investigations;
- facilities management and programming;
- interior lighting design;
- risk assessment for building system performance;
- support for preservation Architecture; and
- simulation of building environmental system performance.

Career Opportunities: Building or engineering companies in close co-operation with architects, engineers and other building professionals in the planning, design and construction of environmental or structural building systems; building facilities management.

Course Duration: To be advised.

Admission Requirements: VCE with a score of at least 22 in English and Mathematical Methods or Specialist Mathematics Units 3 and 4.

Articulation from Associate Diploma or Diploma courses in Building Construction and Design or Engineering. Credit will be given to subjects passed to a sufficient level of competence.

Persons transferring from other courses or having overseas or other entrance qualifications of at least equivalent standard to those listed above, should apply for admission in the normal manner.

Full-fee paying international students must have qualifications which are equivalent to those listed above. In addition, they must provide evidence of proficiency in the English language:

- IELTS - an overall band score of 6+, subject to individual profile; or
- TOEFL - a score of 550+, and a Test of Written English score of 5+.

Course Structure: The course is offered over four years on a full-time basis of 22 contact hours per week. Part-time study may be approved. The course however cannot be completed solely on a part-time basis.

Engineering subject codes commence with ‘V’. Science subject codes commence with ‘R’.

Year 1

Semester One

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<tr>
<th>Course Code</th>
<th>Course Title</th>
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<tr>
<td>RMA1001</td>
<td>ENGINEERING MATHEMATICS 1A</td>
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<td>VAN1011</td>
<td>EXPERIMENTATION AND COMPUTING</td>
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<td>VAN1051</td>
<td>ENGINEERING PROFESSION</td>
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Semester Two

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<td>REP1003</td>
<td>ENGINEERING PHYSICS 1C</td>
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<tr>
<td>RMA1002</td>
<td>ENGINEERING MATHEMATICS 1B</td>
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<td>VAN1022</td>
<td>SOLID MECHANICS 1</td>
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<td>VAN1032</td>
<td>INTRODUCTION TO DESIGN</td>
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Year 2

Semester One

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<td>VAA2031</td>
<td>ARCHITECTURAL HISTORY &amp; DESIGN</td>
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<td>VAN2041</td>
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Semester Two

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<tr>
<td>VAA2002</td>
<td>ELECTRICAL POWER SYSTEMS 1</td>
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<td>VAC2022</td>
<td>BUILDING MATERIALS AND CONSTRUCTION</td>
<td>12</td>
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<tr>
<td>VAC2042</td>
<td>HYDRAULICS</td>
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<tr>
<td>VAN2032</td>
<td>ENGINEERING DESIGN</td>
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</table>
SERVICES STREAM

Year 3
Semester One
VAA3001 ELECTRICAL POWER SYSTEMS 2 12
VAA3031 ENVIRONMENTALLY SUSTAINABLE DESIGN 1 12
VAA3071 HVAC SYSTEMS 1 12
VAA3081 BUILDING CONSTRUCTION AND LEGISLATION 1 12
Semester Two
VAN3052 ENGINEERING MANAGEMENT 12
VAA3032 ENVIRONMENTALLY SUSTAINABLE DESIGN 2 12
VAA3042 HYDRAULIC SERVICES SYSTEMS 12
VAA3072 HVAC SYSTEMS 2 12

STRUCTURES STREAM

Year 3
Semester One
VAA3031 ENVIRONMENTALLY SUSTAINABLE DESIGN 1 12
VAA3081 BUILDING CONSTRUCTION AND LEGISLATION 1 12
VAC3021 STRUCTURAL ANALYSIS 12
VAC3061 GEOMECHANICS 12
Semester Two
VAA3042 HYDRAULIC SERVICES SYSTEMS 12
VAC3062 GEOTECHNICAL ENGINEERING 12
VAC3092 STRUCTURAL DESIGN 12
VAN3052 ENGINEERING MANAGEMENT 12

SERVICES STREAM

Year 4
Semester One
VAA4001 ARCHITECTURAL LIGHTING AND COMMUNICATIONS SYSTEMS 12
VAA4051 BUILDING QUANTITIES AND COSTS 6
VAA4071 HVAC SYSTEMS 3 6
VAN4011 ENGINEERING PROJECT 1 12
VAN4051 ENGINEERING PROJECT MANAGEMENT 12
Semester Two
VAA4032 ENVIRONMENTALLY SUSTAINABLE DESIGN 3 12
VAA4042 BUILDING FIRE SAFETY SYSTEMS 12
VAA4082 BUILDING CONSTRUCTION AND LEGISLATION 2 6
VAA4092 BUILDING SYSTEMS DESIGN AND CONSTRUCTION 6
VAN4012 ENGINEERING PROJECT 2 12

STRUCTURES STREAM

Year 4
Semester One
VAA4051 BUILDING QUANTITIES AND COSTS 6
VAC4021 STRUCTURAL ENGINEERING ANALYSIS AND DESIGN 1 12
VAN4011 ENGINEERING PROJECT 1 12
VAN4051 ENGINEERING PROJECT MANAGEMENT 12
VAA4091 STRUCTURAL DYNAMICS 1 6
Semester Two
VAA4042 BUILDING FIRE SAFETY SYSTEMS 12
VAA4082 BUILDING CONSTRUCTION AND LEGISLATION 2 6
VAA4092 BUILDING SYSTEMS DESIGN AND CONSTRUCTION 6
VAC4022 STRUCTURAL ENGINEERING ANALYSIS AND DESIGN 2 12
VAN4012 ENGINEERING PROJECT 2 12

Other Course Specific Notes

Assessment in subjects is designed to monitor a student’s progress and achievements as well as contribute to and enhance their learning. Normally a prescribed range of assessment methods is employed in any subject.

Assessment is by a combination of written assignments, tests, laboratory work and examinations.

Supplementary assessment is not normally available in any subject except at the discretion of the Head of School in exceptional circumstances.

Special Consideration in assessment may be granted on the grounds defined by the University Statutes.

Guidelines on the use of electronic calculators and other electronic storage devices in examinations are provided in individual subject outlines distributed to students within the first two weeks of semester and included on final examination papers.

Electronic calculators and other electronic storage devices will not be permitted where the above provisions have not been made.

Degree with Honours

A Degree with Honours Program is offered concurrently with the fourth year of the ordinary Bachelor of Engineering program. Normally, students entering the final year of a full-time Bachelor of Engineering program (or its equivalent in part-time mode), will be offered honours candidacy, if they have achieved a minimum hour weighted average of 60 per cent over year levels 1 to 3, have not repeated a subject throughout levels 1 to 3 and have not been granted more than one year completion by compensation throughout the duration of the course. Fourth year honours degree gradings will be determined by the relevant Examiners Board on the basis of the hour weighted average for year level 4.

Industrial Experience

Students are required to undertake a 12 week industrial work experience period during their course. At the end of third year, students will have to undertake a 12 week (minimum) integrated industry placement program. It is intended that this program will meet the 12 week industrial work experience requirements imposed upon all accredited Engineering degree courses by Engineers Australia.

Professional Recognition

The Bachelor of Engineering in Architectural Engineering will be submitted for recognition by the Building Practitioners Board and Building Control Commission in Victoria. This submission is to meet the minimum academic qualification for registration as a Mechanical or Electrical Engineer, or as a Civil Engineer (Structures) as defined by the responsibilities of these categories of ‘Engineer’ in the Victorian Building Control Act. The degree satisfies the requirements for accreditation by The Institution of Engineers, Australia and will be submitted for accreditation by the Australian Institute of Building.

Overseas Exchange Program

Each year two students from Victoria University who are enrolled in either Architectural or Building Engineering, are able to undertake studies with full credit for one semester in the third year of the Architectural Engineering degree program at the University of Nebraska - Omaha (UNO), U.S.A.
University scholarships are available to assist students in undertaking this exchange. The program at UNO is one of the newest and best resourced Architectural Engineering degrees in the U.S.A., having commenced in 1999 within new propose built buildings and facilities.

Admission Requirements

The prerequisite subjects for admission into the first year of the course are based on entry at post Year 12, Victorian Certificate of Education, or equivalent level, and are as follows:

- immediate exposure for management of the course and are as follows:

BACHELOR OF ENGINEERING (BUILDING ENGINEERING)

Course Code: EBCB

Campus: Footscray Park

Course Objectives: This course is unique in Victoria. Building engineers plan and manage the construction of buildings. They must understand the environmental services and structural systems of buildings. Sustainable design concepts are introduced with an appreciation of architectural design.

The course is designed to develop vocational skills for the engineering planning, design, construction, maintenance and management of buildings and building services systems.

The basic objectives of the course are to produce graduates who:

- have a solid foundation of scientific, engineering and project management knowledge gained by specific theoretical and practical exposure to either the design of buildings or structures or building services systems;
- have the ability to communicate effectively, both orally and in writing, and work well in a team situation;
- have an understanding of community needs for building infrastructure in the context of societal aspirations and expectations;
- are motivated to continually improve their knowledge base; and
- are immediately productive upon completion of the course and are thus attractive to prospective employers.

The course recognises societal needs for professional engineers who have sound technical knowledge and good communication skills and capable of providing appropriate building infrastructure that is affordable, safe and comfortable to live and work within. The course is founded on a broad base of science and engineering fundamentals in the first and second year, with emphasis then given in the third and fourth years to applied discipline-specific topics, design and project work. The three study areas commence in the second and third years of the course and are building structures, building services and building construction and project management. In the final year, the focus for the course becomes planning and project management of the building construction process.

Strong emphasis is given to professionalism, ethics and community responsibility. Local examples of building projects provide experiential learning through site visits together with teaching input from practicing Engineers and other professionals in industry. These provide valuable “real-world” case studies and are a motivational asset to the course.

Career Opportunities: Building or engineering companies in co-operation with architects, engineers and other building professionals in the planning and construction management of buildings; building services and building construction and management facilities.

Course Duration: To be advised.

Admission Requirements: The prerequisite subjects for admission into the first year of the course are based on entry at post Year 12, Victorian Certificate of Education, or equivalent level, and are as follows:

Parsons transferring from other courses or having overseas or at least equivalent standard to those listed above, should apply for admission in the normal manner.

Full-time paying international students must have qualifications which are equivalent to those listed above. In addition, they must provide evidence of proficiency in the English language:

- IELTS - an overall band score of 6+, subject to individual profile; or
- TOEFL - a score of 550+, and a Test of Written English score of 5+.

Course Structure: The course is offered over four years on a full-time basis. Part-time study may be approved. However, the course cannot be completed solely on a part-time basis. Students must complete 384 credit points.

Engineering subject codes commence with ‘V’.

Science subject codes commence with ‘R’.

Year 1

Semester One

REPT1001 ENGINEERING PHYSICS 1A 12
RMA1001 ENGINEERING MATHEMATICS 1A 12
VAN1011 EXPERIMENTATION AND COMPUTING 12
VAN1051 ENGINEERING PROFESSION 12

Semester Two

REPT1003 ENGINEERING PHYSICS 1C 12
RMA1002 ENGINEERING MATHEMATICS 1B 12
VAN1022 SOLID MECHANICS 1 12
VAN1032 INTRODUCTION TO DESIGN 12

Year 2

Semester One

VAA2031 ARCHITECTURAL HISTORY & DESIGN 12
VAN2021 SOLID MECHANICS 2 12
VAN2041 THERMOFLUIDS 12
VAN2061 ENGINEERING MATERIALS 12

Semester Two

VAA2002 ELECTRICAL POWER SYSTEMS 1 12
VAC2042 HYDRAULICS 12
VAC2022 BUILDING MATERIALS AND CONSTRUCTION 12
VAN2032 ENGINEERING DESIGN 12

SERVICES STREAM

Year 3

Semester One

VAA3001 ELECTRICAL POWER SYSTEMS 2 12
VAA3031 ENVIRONMENTALLY SUSTAINABLE DESIGN 1 12
VAA3071 HVAC SYSTEMS 1 12
VAA3081 BUILDING CONSTRUCTION AND LEGISLATION 1 12

Semester Two

VAN3052 ENGINEERING MANAGEMENT 12
VAA3042 HYDRAULIC SERVICES SYSTEMS 12
VAA3032 ENVIRONMENTALLY SUSTAINABLE DESIGN 2 12
VAA3072 HVAC SYSTEMS 2 12
### STRUCTURES STREAM

#### Year 3

**Semester One**
- **VAA3081**  BUILDING CONSTRUCTION AND LEGISLATION 1 12
- **VAC3021**  STRUCTURAL ANALYSIS 12
- **VAA3031**  ENVIRONMENTALLY SUSTAINABLE DESIGN 1 12
- **VAC3061**  GEOMECHANICS 12

**Semester Two**
- **VAA3042**  HYDRAULIC SERVICES SYSTEMS 12
- **VAC3062**  GEOTECHNICAL ENGINEERING 12
- **VAC3092**  STRUCTURAL DESIGN 12
- **VAN3052**  ENGINEERING MANAGEMENT 12

### SERVICES STREAM

#### Year 4

**Semester One**
- **VAA4051**  BUILDING QUANTITIES AND COSTS 6
- **VAA4071**  HVAC SYSTEMS 3 6
- **VAN4051**  ENGINEERING PROJECT MANAGEMENT 12
- **VCP5726**  PROJECT PROCUREMENT MANAGEMENT 12
- **VCP5705**  PROJECT MANAGEMENT AND INFORMATION TECHNOLOGY 12
- **VAN4011**  ENGINEERING PROJECT 1 12

**Or #**
- **VCP5716**  PROJECT DEVELOPMENT 12
- **VCP5736**  FACILITY LIFE CYCLE COSTING 12
- **VAN4012**  ENGINEERING PROJECT 2 12

#### Semester Two
- **VAA4082**  BUILDING CONSTRUCTION AND LEGISLATION 2 6
- **VAA4092**  BUILDING SYSTEMS DESIGN AND CONSTRUCTION 6
- **VCP5716**  PROJECT DEVELOPMENT 12
- **VCP5736**  FACILITY LIFE CYCLE COSTING 12
- **VAN4012**  ENGINEERING PROJECT 2 12

### BACHELOR OF ENGINEERING (CIVIL ENGINEERING)

**Course Code:** EBCC

**Campus:** Footscray Park

**Course Objectives:** Civil Engineering is a broad-based discipline involving the planning, design, construction and management of a wide range of essential community infrastructure including, commercial and industrial buildings, water supply and wastewater systems, irrigation, drainage and flood protection systems, bridges, roads, highways and transportation systems, and port harbour and airport facilities. The course philosophy is very much based on a recognition of society’s need for well-rounded engineers who not only have sound technical and communication skills but also a good understanding of the environmental, economic, social and political
The course is founded on a solid base of science and engineering fundamentals in the first two years, with emphasis then being given in years three and four to applied discipline-specific topics, design and project work. Substantial emphasis is given in a range of subjects to professionalism, ethics and community responsibility, team assignments, broad problem solving and communication skills, and the concepts of sustainability and sustainable engineering practices. A focus on local engineering examples, experiential learning and site visits, together with significant input from external industry-based lecturers, provides students with exposure to real world problems and is considered a motivational cornerstone of the course. There are two major streams in structural and water engineering running through the course, complemented by minor streams in geomechanics and transportation engineering. Environmental and management issues are covered in specific subjects but also more broadly by integration into a range of other subjects throughout the course. Subject streams are generally sequential within a well-defined structure. It is envisaged that this structure may be modified somewhat in the future with a view to further motivating students by allowing them a greater degree of flexibility and specialisation, once a firm foundation has been established in the early years of the course. The incorporation of more flexibility should also allow students to remedy any perceived deficiencies in the more basic communication and technical skills. A study abroad exchange program is under investigation with the Department of Civil Engineering at the University of Nebraska at Omaha, Nebraska, USA.

The course is designed to develop skills for the application of engineering principles of planning, design, construction and management of buildings, roads, water supply and all other major community amenities.

Career Opportunities: A wide range of careers involving planning, design, construction and engineering management in private industry or with government authorities.

Course Duration: To be advised.

Admission Requirements: The prerequisite subjects for admission into the first year of the course are based on entry at post Year 12, Victorian Certificate of Education, or equivalent level, and are as follows.

Persons transferring from other courses or having overseas or other entrance qualifications of at least equivalent standard to those listed above, should apply for admission in the normal manner. A preliminary interview with the Head of School concerned is advisable for such applicants.

Full-fee paying international students must have qualifications which are equivalent to those listed above. In addition, they must provide evidence of proficiency in the English language:

- IELTS - an overall band score of 6+, subject to individual profile, or
- TOEFL - a score of 550+, and a Test of Written English (TWE) score of 5+.

Course Structure: The course is offered over four years on a full-time basis. Part-time study may be approved. However the course cannot be completed solely on a part-time basis. Students must complete 384 credit points. Engineering subject codes commence with ‘V’. Science subject codes commence with ‘R’.

<table>
<thead>
<tr>
<th>Year 1</th>
<th>Semester One</th>
<th>Course Title</th>
<th>Credit Points</th>
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<tbody>
<tr>
<td></td>
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<td></td>
<td>VAN1011</td>
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<td>VAC2042</td>
<td>HYDRAULICS</td>
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<td>VAC2072</td>
<td>HIGHWAY ENGINEERING</td>
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<td>VAC3041</td>
<td>HYDROLOGY AND WATER RESOURCES</td>
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<td>GEOMECHANICS</td>
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<td>VAC3062</td>
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<td>VAC4081</td>
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<td>VAC4091</td>
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<td>VAC4072</td>
<td>ENVIRONMENTAL PLANNING AND DESIGN</td>
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<td>VAC4082</td>
<td>ENVIRONMENTAL ENGINEERING 2</td>
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<td>VAC4092</td>
<td>STRUCTURAL ENGINEERING DESIGN 2</td>
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<tr>
<td></td>
<td>VAN4012</td>
<td>ENGINEERING PROJECT 2</td>
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</tr>
</tbody>
</table>

Electives

May be taken to a value of 6, 12 or 18 CP depending on which of VAC4072, VAC4091 and/or VAC4092 is done (18 max)
BACHELOR OF ENGINEERING (ELECTRICAL AND ELECTRONIC ENGINEERING)

Course Code: EBEE

Campus: Footscray Park

Course Objectives: A degree which explores the core areas of the discipline, and the opportunity to specialise in communication engineering, with embedded systems, microelectronic or power systems.

The main objectives of the course are to: provide an integrated foundation for electrical disciplinary studies and course specialisation into the particular areas of Embedded Systems, Microelectronic Systems, Communication Systems and Power Systems Engineering; develop attitudes of personal initiative and enquiry in students that they may continue to further education and meet the technological changes in their profession; develop oral and written communications and an understanding of society and the engineer’s role in society; provide for professional recognition by the Engineers Australia and other professional bodies.

Career Opportunities: Professional engineers in a wide range of industries, including communication, transport, energy and entertainment.

Course Duration: To be advised.

Admission Requirements: VCE units 3 and 4, with a study score of at least 20 in English (any), and in either Mathematical Methods or Specialist Mathematics.

Course Structure: Year 1

Semester 1
VEF1001 ENABLING SCIENCES 1A 12
VEF1003 ELECTRICAL FUNDAMENTALS 1A 12
VEB1100 ENGINEERING DESIGN AND PRACTICE 1A 24

Semester 2
VEF1002 ENABLING SCIENCES 1B 12
VEF1004 ELECTRICAL FUNDAMENTALS 1B 12
VEB1200 ENGINEERING DESIGN AND PRACTICE 1B 24

Year 2

Semester 1
VEF2001 LINEAR SYSTEMS AND MATHEMATICS 2A 12
VEF2003 SYSTEMS AND APPLICATIONS 2C 12
VEB2100 ENGINEERING DESIGN AND PRACTICE 2A 24

Semester 2
VEF2002 SYSTEMS AND MATHEMATICS 2B 12
VEF2004 SYSTEMS & APPLICATIONS 2D 12
VEB2200 ENGINEERING DESIGN AND PRACTICE 2B 24

Year 3

Semester 1
VEG3001 ANALOGUE ELECTRONICS A 6
VEH3003 EMBEDDED COMPUTER SYSTEMS DESIGN 6
VEA3001 INTRODUCTION TO CONTROL SYSTEMS A 6
VEB3100 ENGINEERING DESIGN AND PRACTICE 3A 24

Stream Specialisation Unit 1 (6 Credit Points)

Semester 2
VEP3001 PHOTONICS 6
VES3101 INTRODUCTION TO COMPUTER NETWORKS A 6
VEE3001 INTRODUCTION TO ELECTRICAL MACHINES 6
VEB3200 ENGINEERING DESIGN AND PRACTICE 3B 24

Stream Specialisation Unit 2 (6 Credit Points)

Year 4

Semester 1
VEB4100 ENGINEERING DESIGN 4A 12
VEG4101 PROFESSIONAL PRACTICE 4A 12

Stream Specialisation Unit 3 (6 Credit Points)

Stream Specialisation Unit 4 (6 Credit Points)
Electives 2 x 6 Credit Points

Semester 2
VEB4200 ENGINEERING DESIGN 4B 12
VEG4202 PROFESSIONAL PRACTICE 4B 12

Stream Specialisation Unit 5 (6 Credit Points)
Stream Specialisation Unit 6 (6 Credit Points)
Electives 2 x 6 Credit Points

Streams

Specialisation Stream Units (1-6) - Communication Systems Engineering

VEF3100 ANALOG AND DIGITAL COMMUNICATIONS 6
VEF3200 DIGITAL MODULATION AND CODING 6
VEF4101 FIELD AND WAVES IN TELECOMMUNICATIONS 6
VEF4100 DIGITAL SIGNAL PROCESSING A 6
VEF4202 DATA COMMUNICATIONS 6
VEF4300 DIGITAL COMMUNICATIONS 6

Specialisation Stream Units (1-6) - Embedded Systems Engineering

VEH3001 DIGITAL SYSTEM DESIGN A 6
VEH3004 REAL TIME AND MULTITASKING COMPUTER SYSTEMS 6
VES3102 INTRODUCTION TO COMPUTER NETWORKS B 6
VES4101 COMPUTER SYSTEMS A 6
VEH4001 COMPUTER SYSTEMS ON AN ASIC 6
<table>
<thead>
<tr>
<th>Course Code</th>
<th>Course Title</th>
<th>Credit Hours</th>
</tr>
</thead>
<tbody>
<tr>
<td>VEH3002</td>
<td>DIGITAL SYSTEM DESIGN B</td>
<td>6</td>
</tr>
<tr>
<td>VEM3001</td>
<td>CUSTOM IC DESIGN &amp; EDA TOOLS</td>
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<tr>
<td>VEM3002</td>
<td>APPLICATION SPECIFIC IC DESIGN</td>
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<tr>
<td>VEM4001</td>
<td>ADVANCED CUSTOM IC DESIGN</td>
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<tr>
<td>VEM4012</td>
<td>DESIGN FOR TESTABILITY</td>
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<tr>
<td>VEM4002</td>
<td>HETEROGENEOUS SYSTEMS</td>
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<tr>
<td>VEM4100</td>
<td>ANALOG AND MIXED SIGNAL DESIGN</td>
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</table>

Specialisation Stream Units (1-6) - Microelectronic Systems Engineering

<table>
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<tr>
<th>Course Code</th>
<th>Course Title</th>
<th>Credit Hours</th>
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<tbody>
<tr>
<td>VEM3001</td>
<td>CUSTOM IC DESIGN &amp; EDA TOOLS</td>
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<td>VEM4100</td>
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Specialisation Stream Units (1-6) - Power System Engineering

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<th>Course Title</th>
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<tr>
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<tr>
<td>VEE4500</td>
<td>POWER ELECTRONICS</td>
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<td>VEE4200</td>
<td>ELECTRIC ENERGY SYSTEMS PROTECTION</td>
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<td>VEE4100</td>
<td>ELECTRIC ENERGY SYSTEMS ANALYSIS AND OPERATION</td>
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<tr>
<td>VEE4700</td>
<td>POWER SYSTEM COMMUNICATION, MONITORING AND INSTRUMENTATION</td>
<td>6</td>
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<tr>
<td>VEE4400</td>
<td>HIGH VOLTAGE ENGINEERING</td>
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</table>

Elective Units

Students in a Specialisation Stream may choose elective units from the units in another Specialisation Stream subject to prequisites, from the electives listed below or from outside the School of Electrical Engineering. Units from outside the School are subject to the approval of the Program Coordinator.

<table>
<thead>
<tr>
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<th>Course Title</th>
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<td>VEA4200</td>
<td>FUZZY CONTROL AND APPLICATIONS</td>
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<td>ROBOTICS AND AUTOMATION</td>
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<td>VES4301</td>
<td>SOFTWARE ENGINEERING</td>
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<tr>
<td>VET4400</td>
<td>DIGITAL SIGNAL PROCESSING IN TELECOMMUNICATIONS 2</td>
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BACHELOR OF ENGINEERING SCIENCE (ELECTRICAL AND ELECTRONIC ENGINEERING)

Course Code: EBES

Campus: Footscray Park

Course Objectives: Candidates who elect to take the Masters qualification will develop a detailed understanding of current trends and approaches to practical problem solving in their professional area. Successful completion of the course will equip them with the ability to engage in directed research projects in their industry and to continue to develop appropriate skills in this area. Candidates who complete the Master's level will develop the ability to apply the work covered at the Masters level to the practical solution of specific problems of industrial significance.

Successful completion of the course will give them the skills and experience to act as independent researchers or group leaders for investigations or practical importance in their professional area over the period of their professional life.

The Bachelor of Engineering Science in Electrical and Electronic Engineering is a degree that provides students with a broad grounding in Embedded Systems, Networking, Power Electronics, and Analog Electronics. Much of the course is delivered using a Problem Based Learning (PBL) methodology which uses real world problems to aid the learning process.

Career Opportunities: Engineering technologists in a wide range of industries, including communication, transport, energy and entertainment.

Course Duration: To be advised.

Admission Requirements: VCE Units 3 and 4, with a study score of at least 20 in English (any), and Mathematics (any).

Course Structure: First year units in electrical, electronic, computing, mathematics and physics studies are designed to provide a firm foundation for a wide range of higher level units in later years of the course. In years two and three, the students will be introduced to the tools, techniques and theories of Embedding Systems, Networking, Automation, Analog and Power Electronics. The course has a focus on practical applications and design and project work forms a significant component of the total program. Students will apply the theories and techniques learned in the course to both team projects as well as an individual project in year 3 of the course.

Students completing their studies at an appropriate standard may be granted up to two years of credit into the Bachelor of Engineering degree. In addition, those students completing Year 1 of the program will be able to transfer to Year 2 of the Bachelor of Engineering in Electrical and Electronic Engineering course.

Year 1

<table>
<thead>
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<th>Semester 1</th>
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Year 2

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Year 3

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<td>VEG3001</td>
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Course objectives:

- To provide an educational standard and vocational skills which will enable graduates to undertake professional practice in the discipline of Mechanical Engineering.
- Graduates are provided with a basis to progress through postgraduate studies, continuing education courses and participate in learned society endeavours.

Course Duration: To be advised.

Admission Requirements: The prerequisite subjects for admission into the first year of the course are based on entry at year 12, Victorian Certificate of Education, or equivalent level and are as follows.

- IELTS - an overall band score of 6+, subject to individual profile; or
- TOEFL - a score of 550+, and a Test of Written English (TWE) score of 5+.

Course Structure: The course is offered over four years on a full-time basis. The entire course cannot be completed on a part-time basis. Students must complete 384 credit points.

Engineering subject codes commence with 'V'.

Science subject codes commence with 'R'.

### Year 1

#### Semester One

- RMA1001  ENGINEERING MATHEMATICS 1A  12
- REP1001  ENGINEERING PHYSICS 1A  12
- VAN1051  ENGINEERING PROFESSION  12
- VAN1011  EXPERIMENTATION AND COMPUTING  12

#### Semester Two

- RMA1002  ENGINEERING MATHEMATICS 1B  12
- REP1003  ENGINEERING PHYSICS 1C  12
- VAN1032  INTRODUCTION TO DESIGN  12
- VAN1022  SOLID MECHANICS 1  12

### Year 2

#### Semester One

- VAM2011  COMPUTATIONS AND ENGINEERING ANALYSIS  12
- VAN2021  SOLID MECHANICS 2  12
- VAN2061  ENGINEERING MATERIALS  12
- VAN2041  THERMOFLUIDS  12

#### Semester Two

- Subject VEM2012 not found

### Year 3
will be offered honours candidacy, if they have achieved a minimum hour weighted of a full-time Bachelor of Engineering program (or its equivalent in part-time mode), ordinary Bachelor of Engineering program. Normally, students entering the final year A Degree with Honours Program is offered concurrently with the fourth year of the Degree with Honours where the above provisions have not been made.

Electronic calculators and other electronic storage devices will not be permitted the first two weeks of semester and included on final examination papers. Guidelines on the use of electronic calculators and other electronic storage devices in University Statutes.

Special Consideration in assessment may be granted on the grounds defined by the discretion of the Head of School in exceptional circumstances. Supplementary assessment is not normally available in any subject except at the discretion of the Head of School in exceptional circumstances.

Candidates applying for the award of a degree in mechanical engineering must ensure that they have submitted for approval evidence of having undertaken a minimum of 12 weeks industrial experience relevant to the course to satisfy the Institution of Engineers, Australia, requirements.

Victoria University has exchange agreements with universities in many countries, some of which are the U.S.A., Canada, Mexico, United Kingdom and many European and Asian countries.

For those students who do wish to study abroad, there is the opportunity to experience living in a different culture and environment, and to develop self-responsibility and reliability skills. Many students achieve improved results in their remaining studies after returning home, having developed a clearer perception of their future career with a stronger determination to succeed.

Engineers Australia recognises the degree as meeting all academic requirements for corporate membership as a chartered engineer. Completion of the degree plus 12 weeks approved experience will admit to Graduate Membership. Victoria University students are eligible for Student Membership.

**BACHELOR OF ENGINEERING (ROBOTIC ENGINEERING)**

Course Code: EBRE

Campus: Footscray Park

Course Objectives: (For continuing students only)

This course is envisaged to integrate existing relevant subjects and resources within the Faculty of Health, Engineering and Science to appeal to incoming high ENTER level students with mechanical, electronic and computer interests along with the essential background in mathematics and physics.

The structure of the course is to provide a common core progression with the revised Mechanical Engineering degree course linked with specialist subjects in robotics. Student completing this course will find employment as specialist engineers in the mechanical and electronic engineering interface in industry and research.

Course Duration: To be advised.

Admission Requirements: To qualify for admission to the course an applicant must have successfully completed a course of study at year 12 level or equivalent. In addition to satisfying the entry requirements for Australian resident students or demonstrating equivalence, overseas students must provide evidence of proficiency in the English language:

- IELTS - an overall band score of 6.7, subject to individual profile; or
- TOEFL - a score of 550+ , and a Test of Written English (TWE) score of 5+.

Course Structure: The course is offered over four years on a full-time basis or part-time equivalent.

Engineering Unit of Study codes commence with ‘V’.

Science Unit of Study codes commence with ‘R’.

| Year 3 | VAM4071 | DYNAMICS 12 |
| Year 4 | VAM4031 | MECHANICAL ENGINEERING DESIGN 12 |
| Year 4 | VAM4032 | MECHANICAL ENGINEERING DESIGN 2 12 |
| Year 4 | VAN4012 | ENGINEERING PROJECT 2 12 |
| Year 4 | VAM4041 | HEAT TRANSFER AND COMBUSTION 12 |
| Year 4 | VAM4062 | manufacturing and polymer technologies 12 |
| Year 4 | VAM4072 | ADVANCED MECHANICS 12 |
| Year 4 | VAM4082 | AUTOMOTIVE ENGINES, ENERGY AND ENVIRONMENT 12 |

Other Course Specific Notes

Assessment in subjects is designed to monitor a student’s progress and achievements as well as contribute to and enhance their learning. Normally a prescribed range of assessment methods is employed in any subject.

Supplementary assessment is not normally available in any subject except at the discretion of the Head of School in exceptional circumstances.

Special Consideration in assessment may be granted on the grounds defined by the University Statutes.

Guidelines on the use of electronic calculators and other electronic storage devices in examinations are provided in individual subject outlines distributed to students within the first two weeks of semester and included on final examination papers.

Electronic calculators and other electronic storage devices will not be permitted where the above provisions have not been made.

Degree with Honours

A Degree with Honours Program is offered concurrently with the fourth year of the ordinary Bachelor of Engineering program. Normally, students entering the final year of a full-time Bachelor of Engineering program (or its equivalent in part-time mode), will be offered honours candidacy, if they have achieved a minimum hour weighted average of 60 per cent over year levels 1 to 3, have not repeated a subject through levels 1 to 3 and have not been granted more than one stage completion throughout the duration of the course. Fourth year honours degree gradings will be determined by the relevant Examiners Board on the basis of the hour weighted average for year level 4.

Industrial Experience

Candidates applying for the award of a degree in mechanical engineering must ensure that they have submitted for approval evidence of having undertaken a minimum of 12 weeks industrial experience relevant to the course to satisfy the Institution of Engineers, Australia, requirements.

Overseas Exchange Program

Victoria University has exchange agreements with universities in many countries, some of which are the U.S.A., Canada, Mexico, United Kingdom and many European and Asian countries.

For those students who do wish to study abroad, there is the opportunity to experience living in a different culture and environment, and to develop self-responsibility and reliability skills. Many students achieve improved results in their remaining studies after returning home, having developed a clearer perception of their future career with a stronger determination to succeed.
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<td>VEH3004</td>
<td>REAL TIME AND MULTITASKING COMPUTER SYSTEMS</td>
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### Elective

Elective units must be approved by the Course Coordinator.

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### BACHELOR OF TECHNOLOGY (BUILDING SURVEYING)

<table>
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<tr>
<th>Campus: Werribee, Footscray Park, Sunshine</th>
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**Course Objectives:**
Building surveyors have expert knowledge of occupant safety, urban amenity, environmental sustainability and other considerations in the design and construction of buildings. They are responsible for statutory functions such as building permits, mandatory building inspections and issuing occupancy permits, and work with project architects, engineers and managers. This course provides a tertiary degree in Building Surveying with exit points at Diploma of Building Surveying qualification level and Advanced Diploma of Building Surveying qualification level. The first three years of the course (at Sunshine campus) focus on building technology and statutory control of building. This involves completion of twenty-four units of competency learning over two years leading to the Diploma of Building Surveying, followed by completion of an additional nineteen units of competency learning leading to the Advanced Diploma of Building Surveying. Concurrent studies (at Footscray Park campus) provide students with basic professional literacy and numeracy. Subjects prescribed for this purpose are VAN1051 Engineering Profession, JCM0110 Mathematics and RMA1001 Engineering Mathematics 1A. In the final (fourth) year of the course (spread over Footscray Park and Werribee campuses), the focus is on professional practice primarily in the areas of building design, building approval and building construction. Graduates of this course will have completed studies equivalent to the Graduate Certificate in Performance-Based Building and Fire Codes (Course Code: ETQ8) at Werribee campus.

Course objectives are to produce graduates who have acquired a strong technological base for professional practice in the area of Building Surveying and exhibit valuable graduate attributes as follows: A sound knowledge of the structure and practices of Australian building (design and construction) regulatory systems; an understanding and appreciation of building design and approval, and building construction and inspection, as it is influenced by a variety of political, social, economic, cultural, industrial and technological factors; a broad range of vocational skills that can be used to manage and operate a building surveying business, within either the private sector or public sector, and meet the needs of developers, practitioners, authorities, manufacturers, tradespeople and other significant stakeholders; specific skills that will lead to employment in the fields of design consultancy, certification, approvals and permits, construction management, detailed hydraulic, electrical and mechanical services installations, inspection and maintenance, and facility management; an ability to work independently, ethically and professionally in the provision of building surveying services to clients and/or employers, whether as a sole practitioner or within larger organizations including engineering and building surveying consultancies, building contractors, manufacturers, statutory authorities, local government and state government departments; an ability to adapt to the changing needs of industry, commerce and community, as well as the ability to take a leadership role in promoting institutional and social change with social justice initiatives.

Graduates of this course will have had the opportunity to experience learning in a dual sector environment that assists them in both finding employment and becoming lifelong learners in the broader context. Successful graduates of the Bachelor of Technology in Building Surveying course should be able to demonstrate valuable capabilities as follows: Be effective problem solvers in a range of settings including professional practice; Locate, evaluate, manage and use information effectively, including critical thinking, information technology skills, information gathering skills, and carrying out statistical and other calculations; Communicate effectively in oral and written form as a professional and as a citizen; Work as a professional both autonomously and collaboratively.

**Career Opportunities:** Administration of acts, regulations, codes and standards applicable in the planning, design, documentation, approval, construction, occupation, alteration, maintenance and demolition of buildings in both the private and the public sectors.

**Course Duration:** To be advised.

**Admission Requirements:** Admission at other levels may be approved, e.g., in the case of an applicant having commenced or completed studies leading to a Diploma or Advanced Diploma at an Institute of TAFE or in the case of a mature-age applicant.
Course Structure: Four years full-time. Part-time enrolment may also be approved.

Year 1 and Year 2
Diploma of Building Surveying

BCGSV5001A  ASSESS THE CONSTRUCTION OF DOMESTIC SCALE BUILDINGS 0
BCGSV5002A  EVALUATE MATERIALS FOR CONSTRUCTION OF DOMESTIC SCALE BUILDINGS 0
BCGSV5003A  PRODUCE WORKING DRAWINGS FOR RESIDENTIAL BUILDINGS 0
BCGSV5004A  APPLY LEGISLATION TO URBAN DEVELOPMENT AND BUILDING CONTROLS 0
BCGSV5005A  APPLY FOOTING AND GEOMECHANICAL DESIGN PRINCIPLES FOR DOMESTIC SCALE BUILDINGS 0
BCGSV5006A  ASSESS CONSTRUCTION FAULTS IN RESIDENTIAL BUILDINGS 0
BCGSV5007A  UNDERTAKE SITE SURVEYS AND SET OUT PROCEDURES TO BUILDING PROJECTS 0
BCGSV5008A  APPLY BUILDING CONTROL LEGISLATION TO BUILDING SURVEYING 0
BCGSV5009A  ASSESS THE IMPACT OF FIRE ON BUILDING MATERIALS 0
BCGSV5010A  INTERACT WITH CLIENTS IN A REGULATED ENVIRONMENT 0
BCGSV5011A  APPLY BUILDING CODES AND STANDARDS TO RESIDENTIAL BUILDINGS 0
BCGSV5012A  ASSESS TIMBER FRAMED DESIGNS FOR ONE AND TWO STOREY BUILDINGS 0
BCGSV5013A  APPLY PRINCIPLES OF ENERGY EFFICIENT DESIGN TO BUILDINGS 0
BCGSV5014A  APPLY BUILDING SURVEYING PROCEDURES TO RESIDENTIAL BUILDINGS 0
BCGSV5015A  ASSESS STRUCTURAL REQUIREMENTS FOR DOMESTIC SCALE BUILDINGS 0
BSBADM506A  MANAGE BUSINESS DOCUMENT DESIGN AND DEVELOPMENT 0
BSBCM406A  MAINTAIN BUSINESS TECHNOLOGY 0
CHCCOM3A  UTILISE SPECIALIST COMMUNICATION SKILLS 0
CHCCOM4A  DEVELOP, IMPLEMENT & PROMOTE EFFECTIVE COMMUNICATION TECHNIQUES 0
ICAITU128A  OPERATE A PERSONAL COMPUTER 0
ICAITU129A  OPERATE A WORD PROCESSING APPLICATION 0
ICAITU130A  OPERATE A SPREADSHEET APPLICATION 0
ICAITU131A  OPERATE A DATABASE APPLICATION 0
ICAITU133A  SEND AND RETRIEVE INFORMATION OVER THE INTERNET USING BROWSERS AND EMAIL 0

Subtotal for Diploma  1136

plus Higher Education/Foundation Studies

VAN1051  ENGINEERING PROFESSION 12

Total for Years 1 and 2 N/A 1268

Year 3
Advanced Diploma of Building Surveying

BCGSV6001A  ASSESS THE CONSTRUCTION OF BUILDINGS UP TO 3 STOREYS 0
BCGSV6002A  PRODUCE WORKING DRAWINGS FOR BUILDINGS UP TO 3 STOREYS 0
BCGSV6003A  ASSESS CONSTRUCTION FAULTS IN BUILDINGS UP TO 3 STOREYS 0
BCGSV6004A  APPLY FOOTINGS AND GEOMECHANICAL DESIGN PRINCIPLES TO BUILDINGS UP TO 3 STOREYS 0
BCGSV6005A  EVALUATE SERVICES LAYOUT AND CONNECTION METHODS FOR RESIDENTIAL AND COMMERCIAL BUILDINGS UP TO 3 STOREYS 0
BCGSV6006A  EVALUATE THE USE OF CONCRETE FOR RESIDENTIAL AND COMMERCIAL BUILDINGS UP TO 3 STOREYS 0
BCGSV6007A  ASSESS STRUCTURAL REQUIREMENTS FOR BUILDINGS UP TO 3 STOREYS 0
BCGSV6008A  APPLY BUILDING CODES AND STANDARDS TO BUILDINGS UP TO 3 STOREYS 0
BCGSV6009A  IMPLEMENT PERFORMANCE BASED CODES AND RISK MANAGEMENT PRINCIPLES FOR BUILDINGS UP TO 3 STOREYS 0
BCGSV6010A  APPLY FIRE TECHNOLOGY TO BUILDINGS UP TO 3 STOREYS 0
BCGSV6011A  APPLY LEGAL PROCEDURES TO BUILDING SURVEYING 0
BCGSV6012A  FACILITATE COMMUNITY DEVELOPMENT CONSULTATION 0
BCGSV6013A  CO-ORDINATE ASSET REFURBISHMENT 0
BCGSV6014A  MANAGE AND PLAN LAND USE 0
BCGSV6015A  ANALYSE AND PRESENT BUILDING SURVEYING RESEARCH INFORMATION 0
BSX154L606  MANAGE HUMAN RESOURCES 0
LMFFT4010A  IDENTIFY AND CALCULATE PRODUCTION COSTS 0

Subtotal for Advanced Diploma  1004

plus Higher Education

RMA1001  ENGINEERING MATHEMATICS 1A 12

Total for Year 3 N/A 1064

Year 4

Includes subjects as prescribed for Graduate Certificate in Performance-Based Building and Fire Codes

Semester One

VQB5611  RISK ASSESSMENT AND HUMAN BEHAVIOUR 12
VQB5621  FIRE GROWTH, DETECTION AND EXTINGUISHMENT 12
VAN4011  ENGINEERING PROJECT 1 12
VAN4051  ENGINEERING PROJECT MANAGEMENT 12

Subtotal Semester One 48 186

Semester Two

VQB5632  SMOKE AND FIRE SPREAD, FIRE SAFETY SYSTEM DESIGN 12
VQB5642  PERFORMANCE CODES METHODOLOGY AND STRUCTURE 12
VAN4012  ENGINEERING PROJECT 2 2
VAN3052  ENGINEERING MANAGEMENT 12

Subtotal for Semester Two 48 186
GRADUATE DIPLOMA IN PROJECT MANAGEMENT
Course Code: EGPR

Campus: Werribee, City Flinders, Sunbury

Course Objectives: To provide students with a conceptual understanding of relevant models, modes of analysis and techniques for understanding and procurement. They will also have developed the ability to apply and carrying out project management, contract management and evaluate these models, modes of analysis and technique in the context of the legal, ethical and accountability requirements which apply. In addition to the technical skills provided in the course, graduates will have developed strong relevant professional skills as well as strong personal, interpersonal and organisational attributes. By utilising a consultative committee of current project management professionals, the course has been designed to meet the needs of project managers in industry. Equip professionals already in industry with advanced principles and techniques to enable them to assume the role of project manager / and or become effective member of project management teams. Adap a unique approach to manage people, resources, time line and risks to achieve a successful project outcome.

Course Duration: To be advised.

Admission Requirements: A degree or a diploma in any discipline and a minimum of 2 years post-qualification experience. The requirement of qualification may be waived in exceptional circumstance on the basis of experience.

Course Structure: 1 year (full time)

Year One - Semester One

VPP5600 PRINCIPLES OF PROJECT MANAGEMENT 12
BMO5519 CONTRACT AND PROCUREMENT MANAGEMENT 12

Plus two electives from Group (b) or (c) as listed below.

Students may exit with a Graduate Certificate in Project Management after successfully completing 8 units (96 credit points).

Semester Two

AHS5205 PROJECT MANAGEMENT AND PEOPLE 12
VPP5630 RESEARCH METHODS 12

Choose one unit from Group (a)

Choose one elective from Group (b)

Group A Faculty Based Core Units (12 credit points each)

VPP5610 PROJECT PLANNING AND CONTROL 12
BMO5602 BUSINESS PROJECT MANAGEMENT 12
AHS5201 SPORT RESOURCE MANAGEMENT 12

Group B - Project Management Specific Electives (12 credit points each)

VPP5620 PROJECT STAKEHOLDERS MANAGEMENT 12
VPP5621 PROJECT RISK MANAGEMENT 12
VEH6013 PROJECT MANAGEMENT AND ENTREPRENEURSHIP 12
VPP8050 PROJECT MANAGEMENT SPECIFIC TOPIC (PROJECT WORK - 12CP) 12
VCP5705 PROJECT MANAGEMENT AND INFORMATION TECHNOLOGY 12
VPP5716 PROJECT DEVELOPMENT ANALYSIS AND REVIEW 12
VCP5736 FACILITY LIFE CYCLE COSTING 12
VCP5745 BUILDING REGULATORY MANAGEMENT 12
VPP5630 RESEARCH METHODS 12

Students may exit with a Graduate Diploma in Project Management after successfully completing 8 units (96 credit points).

MASTER OF ENGINEERING SCIENCE (COMPUTER AND MICROELECTRONIC ENGINEERING)
Course Code: EMCE

Campus: Footscray Park

Course Objectives: (For continuing students only)

The computer systems engineer today is faced with many challenges brought about by the rapid advances in computer multimedia and telecommunication technology. The recent development of computer systems engineering has already established a firm foundation for a need of qualified engineers in this high technology industry.

The Master of Engineering Science course in Computer Systems Engineering addresses all aspects of this technology. From high level specification of computer and microelectronic systems, through implementation alternatives, to realisation of chips and also introduces students to the anticipated demands of Information Technology in the twenty first century. Course material is drawn from a variety of backgrounds and includes: Integrated Circuit Design Methodologies, Digital and Analog Circuit Design, and Computer System Design and Implementation.

The course aims to produce engineers with the necessary skills and practical experience to satisfy the requirements of the microelectronics industry. An important feature of the course is the opportunity it provides for the students to design their own integrated circuits. The specific aims of the course are to: provide an integrated foundation for electrical disciplinary studies and course specialisation into the area of Computer Systems Engineering; develop the advanced technical skills necessary to master state of the art microelectronic technology; develop research skills necessary to obtain specialist knowledge of subjects pertinent to a given field of study; cultivate logical and lateral thinking that leads to creation and innovation in the pursuit of solutions to engineering problems.

Course Duration: To be advised.

Admission Requirements: Admission to the course requires a four year Bachelor of Engineering degree in Electrical & Electronic Engineering or a four year Bachelor of Applied Science (Honours) degree in an appropriate field, or an equivalent.

Applicants with a three year Bachelor of Applied Science degree (in an appropriate field) or a Bachelor of Engineering degree in another field may also be considered for admission on the condition that they may be required to complete some preliminary subjects that will strengthen their knowledge and skills in Computer Systems Microelectronic Engineering.

Full-fee paying international students are required to have qualifications equivalent to those above, and in addition, they must provide evidence of proficiency in English Language, as assessed by;

- IELTS - an overall band score of 6.5, subject to individual profile; or
- TOEFL - a score of 580, and a Test of Written English (TWE) score of 5.5.

Course Structure: The course is of one year duration for full-time students and a part-time equivalent for part-time students.

The course is unit based and consists of research projects (2 units), a core unit and elective subjects. The completion of the course requires successful completion of two units of research project, the core unit and at least five units of elective subjects of which at least three must be from Computer and Microelectronics Engineering disciplines.

Core Subjects

VEH6002 IC DESIGN 12
VEH6003 EDA TOOLS AND DESIGN METHODOLOGY 12

Elective Subjects

VEH6001 HDL AND HIGH LEVEL SYNTHESIS 12
VEH6004 DIGITAL SYSTEM DESIGN 12
VEH6007 ADVANCED VLSI DESIGN 12
VEH6008 VLSI DIGITAL SIGNAL PROCESSING SYSTEMS 12
VEH609 RELIABILITY AND TESTABILITY IN IC DESIGN 12
VEH6014 RF AND MIXED SIGNAL DESIGN 12
VEH6016 VERILOG HDL 12
VEH6017 DIGITAL SYSTEM DESIGN WITH VERILOG HDL 12
VEH6018 ANALOG & MIXED SIGNAL DESIGN 12
VEH6101 ASIC DESIGN TECHNIQUES 12
VEH6102 CUSTOM IC DESIGN B 12
VEH6111 DIGITAL CIRCUIT DESIGN 12
VEH6121 BASIC IC DESIGN/DEVICES 12
VEH6122 CUSTOM IC DESIGN A 12
VEH6152 MICROPROCESSOR DESIGN TECHNIQUES 12

Core Units of Study

VEA6311 MODELLING AND COMPUTER CONTROL 12
VEA6312 MODEL BASED PROCESS CONTROL 12
VEA6321 FUZZY AND NEURAL CONTROL 12
VEA6322 PROCESS INSTRUMENTATION AND CONTROL 12

Elective Units of Study

VEA6331 ROBOTICS AND PROGRAMMED CONTROL 12
VEA6332 ELECTRONIC CONTROL OF MOTORS 12
VEA6341 MEASUREMENT TECHNOLOGY 12
VEA6342 POWER DISTRIBUTION SYSTEMS 12
VEA6351 POWER SYSTEMS OPERATION AND CONTROL 12
VEA6352 DIGITAL SIMULATION OF PROTECTION SYSTEMS 12

Computer Engineering Specialisation

Core Units of Study

VEC6111 COMPUTER TECHNOLOGY 12
VEC6112 ADVANCED MICROPROCESSORS 12
VEC6121 OBJECT ORIENTED SOFTWARE 12
VEC6122 OPERATING SYSTEMS AND MULTIPROCESSING 12

Elective Units of Study

VEC6131 COMPUTER INTERCONNECTION HARDWARE 12
VEC6132 DIGITAL SYSTEM MODELLING AND SIMULATION 12
VEC6141 SOFTWARE ENGINEERING 12
VEC6142 MANAGING SOFTWARE PROJECTS 12
VEC6151 DATABASE AND QUERY SYSTEMS 12
VEH6152 MICROPROCESSOR DESIGN TECHNIQUES 12
VEH6152 APPLIED KNOWLEDGE SYSTEMS 12

Microelectronic Engineering Specialisation

Core Units of Study

VEH6001 HDL AND HIGH LEVEL SYNTHESIS 12
VEH6002 IC DESIGN 12
VEH6003 EDA TOOLS AND DESIGN METHODOLOGY 12
VEH6004 DIGITAL SYSTEM DESIGN 12
VEH6007 ADVANCED VLSI DESIGN 12
VEH6009 RELIABILITY AND TESTABILITY IN IC DESIGN 12

Elective Units of Study

VEH6008 VLSI DIGITAL SIGNAL PROCESSING SYSTEMS 12
VEH6014 RF AND MIXED SIGNAL DESIGN 12
VEH6016 VERILOG HDL 12
VEH6017 DIGITAL SYSTEM DESIGN WITH VERILOG HDL 12
VEH6018 ANALOG & MIXED SIGNAL DESIGN 12

Career Opportunities: The graduate should be able to work in specialised areas of the electronic engineering industry and appropriate research institutions.

Course Duration: To be advised.

Admission Requirements: Admission to the course requires a four year Bachelor of Engineering degree in Electrical & Electronic Engineering, or an equivalent. Full-fee paying international students are required to have qualifications equivalent to above, and in addition, they must provide evidence of proficiency in English Language, as assessed by: (a) International English Language Testing System - an overall band score of 6+ subject to individual profile, or, (b) Test of English as a Foreign Language - a score of 550+, and a Test of Written English score of 5+.

Course Structure: The duration of the course, in normal mode of delivery, is two years for full-time students and a part-time equivalent for part-time students. The course is unit based and offers a range of 12 and 24 credit point units comprising of core and elective units in a chosen area of specialization. The course requires successful completion of 192 credit points comprising of all the core units of study and the appropriate electives in a chosen area of specialization (total of 96 credit points), plus 48 credit points of research projects: a 12 credit point research methods unit and a 36 credit point project management program.
Photonic Engineering Specialisation

Core Units of Study
- VPP6511 FIBRE OPTIC COMMUNICATION SYSTEMS 12
- VPP6512 ADVANCED FIBRE OPTICS 12
- VPP6521 OPTICS AND LASERS 12
- VPP6522 DIGITAL COMMUNICATIONS OVER OPTICAL NETWORKS 12

Elective Units of Study
- VPP6531 QUANTUM OPTICS 12
- VPP6532 OPTICAL FIBRE SENSORS 12
- VPP6541 OPTICAL MATERIALS 12
- VPP6542 DATA ACQUISITION 12

Telecommunication Engineering Specialisation

Core Units of Study
- VET6501 COMMUNICATION SYSTEM MODELING AND SIMULATION 112
- VET6502 COMMUNICATION SYSTEM MODELING AND SIMULATION 2 12
- VET6510 COMMUNICATION THEORY 12
- VET6520 DIGITAL COMMUNICATION PRINCIPLES 12
- VET6511 DATA NETWORK ANALYSIS AND DESIGN 12
- VET6542 MOBILE AND PERSONAL COMMUNICATION SYSTEMS 12

Elective Units of Study
- VET6521 DIGITAL SWITCHING AND SIGNALLING SYSTEMS 12
- VET6522 TELECOMMUNICATION TARIFF STRUCTURES AND TELETRAFFIC ENGINEERING 12
- VET6531 WIRELESS COMMUNICATION SUBSYSTEMS 12
- VET6541 MULTIMEDIA AND INTERNET TECHNOLOGY 12
- VET6552 COMPUTER NETWORKS AND NETWORKING SOFTWARE 12
- VET6562 DIGITAL SIGNAL PROCESSING 12

Project Units
- VEE6001 RESEARCH PROJECT A 24
- VEE6002 RESEARCH PROJECT B 24
- RCSS100 RESEARCH METHODOLOGY 12
- VEE6052 PROJECT MANAGEMENT PROGRAM 1 12
- VEE6053 PROJECT MANAGEMENT PROGRAM 2 24

Assessment
Assessment will be based on a combination of written assignments, laboratory and project works, formal examinations and presentations. Supplementary assessments are not normally available.

NOTE: The School of Engineering and Science reserves the right to decide which of the specialisation streams would run at any given time, without giving any prior notice. Prospective students are advised to contact the school before embarking on a particular specialisation.

MASTER OF ENGINEERING (MECHANICAL ENGINEERING)

Course Code: EMME

Campus: Footscray Park

Course Objectives: (For continuing students only)
The aim of this course is to provide students with an opportunity to achieve in-depth comprehension of engineering fundamentals and advanced skills of research and development essential in modern practice of Mechanical Engineering.

Course Duration: To be advised.

Admission Requirements: Admission to the course may be granted to the following applicants:
- holders of a Four Year Bachelor of Mechanical Engineering degree, or an equivalent, accredited for Graduate membership of the Institution of Engineers, Australia, having either an Honours degree or an ordinary degree with significant professional industrial experience.
- applicants with overseas degree in Mechanical Engineering at least at Bachelor level and judged by the School of Architectural, Civil and Mechanical Engineering to be of excellent standard.
- Applicants with qualifications at least at Bachelor level in other engineering and science disciplines with a minimum of three years industrial experience.

In addition, full fee international students must provide evidence of proficiency in the English Language:
- IELTS - an overall band score of 6.5;
- TOEFL - a minimum score of 550+ and a TWE (Test of Written English) score of 5.5.

Course Structure: The Course is offered over a period of two years full time. Applicants of exceptional standard may get exemption of Semester 1 and may complete the course in one-and-a-half years full time. (exemption of one or more subjects in this Semester is considered on a case by case basis).

Year 1
Semester 1
- VMY5682 EXPERIMENTAL TECHNIQUES AND SIGNAL PROCESSING 12
- VMC5672 NUMERICAL TECHNIQUES AND PROGRAMMING 12
- VWV5682 MANUFACTURING MATERIALS 12
- VCP5610 PROJECT MANAGEMENT PLANNING AND CONTROL 12

Semester 2
- VME5782 COMPUTER AIDED ENGINEERING 12
- VWV5781 ADVANCED DYNAMICS AND VIBRATIONS 12
- WVF5881 ADVANCED FLUID-THERMO DYNAMICS 12
- VWV5771 RESEARCH TECHNIQUES 12

Year 2
- VWV5782 COMPUTATIONAL DYNAMICS 12
- WMT5882 COMPUTATIONAL FLUID DYNAMICS 12
- VME5782 SPECIALIST ELECTIVE 12
- VMP5872 RESEARCH PROJECT 12

Other Course Specific Notes
Assessment of the coursework will be a combination of examinations, written assignments, tests, and laboratory work. To achieve a successful Minor Thesis student will have to demonstrate competence in research of an engineering problem,
reviewing literature, collecting and analysing data, drawing conclusions and writing the thesis. Assessment of the Minor Thesis is entirely based on the thesis by two examiners, at least one is external to the University.

**MASTER OF ENGINEERING (MICROELECTRONIC ENGINEERING)**
Course Code: EMMN

**Campus:** Footscray Park

**Course Objectives:** (For continuing students only)

The general aims of the course are to provide graduates with:

- high levels of both logical and lateral thinking development so that the graduates can lead constructive change through innovation;
- the ability to use a multi-disciplinary engineering philosophy towards the synthesis, design and integration of solutions; and
- a level of professional development in confidence, judgement and experience such that the implementation of proposed solutions proceeds successfully.

The specific aims of the course are to:

- develop integrated circuit design expertise in embedded systems, digital, mixed signal and system-on-chip systems design and verification;
- develop a basic understanding of the device physics, the fabrication process and the testing to the level needed by IC designers;
- develop the advanced technical and algorithmic skills necessary to master state of the art microelectronic technology;
- develop research skills necessary to obtain specialist knowledge of issues pertinent to integrated circuit design;
- cultivate logical and lateral thinking that leads to creation and innovation in the pursuit of solutions to engineering problems.

**Course Duration:** To be advised.

**Admission Requirements:** Admission to the course normally requires a four year Bachelor of Engineering degree in Electronic Engineering or Computer Engineering or Communication/Telecommunication Engineering or a four-year Bachelor of Science (Honours) degree in an appropriate field, or an equivalent qualification.

Applicants with a three year Bachelor of Science degree (in appropriate field) or a Bachelor of Engineering degree in another field may also be considered for admission on the condition that they may be required to take additional (preliminary) subjects that will strengthen their knowledge and skills in digital systems, analog electronics and microprocessor systems.

Full fee paying international students must have qualifications which are equivalent to those listed above. In addition they must provide evidence of proficiency in the English language as assessed by:

- IELTS - an overall band score of 6.5, subject to individual profile; or
- TOEFL - a score of 580, and a Test of Written English (TWE) score of 5.5.

A panel comprising of academics from each of the partner universities will carry out student selection into this course.

**Course Structure:** The duration of the course, in normal mode of delivery, is one and a half years full-time or part-time equivalent for Masters course.

The Master of Engineering course is structured to provide students to exit at different academic levels with either, Graduate Certificate, Graduate Diploma or Master of Engineering qualifications. The completion of the Graduate Certificate in Microelectronic Engineering requires successful completion of four units, Graduate Diploma in Microelectronic Engineering requires successful completion of either eight units or six units and minor project, and Master of Engineering in Microelectronic Engineering requires successful completion of either eight units and major project or ten units and minor project.

**Year 1**

**Core Units**

- VEH6001 HDL AND HIGH LEVEL SYNTHESIS 12
- VEH6002 IC DESIGN 12
- VEH6003 EDA TOOLS AND DESIGN METHODOLOGY 12

AND FIVE of Approved Elective Units of Study Electives

- VEH6004 DIGITAL SYSTEM DESIGN 12
- VEH6007 ADVANCED VLSI DESIGN 12
- VEH6008 VLSI DIGITAL SIGNAL PROCESSING SYSTEMS 12
- VEH6009 RELIABILITY AND TESTABILITY IN IC DESIGN 12
- VEH6014 RF AND MIXED SIGNAL DESIGN 12
- VEH6016 VERILOG HDL 12
- VEH6017 DIGITAL SYSTEM DESIGN WITH VERILOG HDL 12
- VEH6018 ANALOG & MIXED SIGNAL DESIGN 12
- VEH6020 MINOR PROJECT 24
- VEH6030 MAJOR PROJECT 48

AND 2 OF Approved Elective Units of Study Other Course Specific Notes

All Special Electives for Chip skills program are to be approved by the Course Directors (RMIT & VU).

**MASTER OF ENGINEERING SCIENCE IN MICRO AND NANO ELECTRONICS**
Course Code: EMMN

**Campus:** Footscray Park

**Course Objectives:** The objectives of these courses is to addresses fundamental aspects of design, from high level specification of micro and nano electronic circuits and systems, through the implementation of layout and routing, and the effective use of Cadence and Synopsys EDA design tools, to prepare an integrated circuit to its pre-fabrication stage. The course aims to produce engineers with the necessary skills and practical experience to satisfy the requirements of the industry. Course material is drawn from a variety of backgrounds and includes Integrated Circuit Design Methodologies, Digital and Analogue Circuit Design, and Computer System Design and Implementation.

Full fee paying international students must have qualifications which are equivalent to those listed above. In addition they must provide evidence of proficiency in the English language as assessed by:

- IELTS - an overall band score of 6.5, subject to individual profile; or
- TOEFL - a score of 580, and a Test of Written English (TWE) score of 5.5.

A panel comprising of academics from each of the partner universities will carry out student selection into this course.

Course Structure: The duration of the course, in normal mode of delivery, is one and a half years full-time or part-time equivalent for Masters course.

The Master of Engineering course is structured to provide students to exit at different academic levels with either, Graduate Certificate, Graduate Diploma or Master of Engineering qualifications. The completion of the Graduate Certificate in Microelectronic Engineering requires successful completion of four units, Graduate Diploma in Microelectronic Engineering requires successful completion of either eight units or six units and minor project, and Master of Engineering in Microelectronic Engineering requires successful completion of either eight units and major project or ten units and minor project.

**Career Opportunities:** Telecommunications, Wireless, Mobile and Network Engineering.
Course Duration: To be advised.

Admission Requirements: Admission to the course requires a four year Bachelor of Engineering degree in Electrical & Electronic Engineering or a four year Bachelor of Applied Science (Honours) degree in an appropriate field, or an equivalent.

Applicants with a three year Bachelor of Applied Science degree (in an appropriate field) or a Bachelor of Engineering degree in another field may also be considered for admission on the condition that they may be required to complete some preliminary subjects that will strengthen their knowledge and skills in micro/nano electronic engineering.

Full-time paying international students are required to have qualifications equivalent to those above, and in addition, they must provide evidence of proficiency in English Language, as assessed by:
- IELTS - an overall band score of 6.5, subject to individual profile; or
- TOEFL - a score of 580, and a Test of Written English (TWE) score of 5.5.

Course Structure: The course is of one year duration for full-time students and a part-time equivalent for part-time students.

The course is unit based in which 8 core units must be completed to successfully graduate from this course.

Core Units of Study (Semester 1)

VEH6002  IC DESIGN 12
VEH6003  EDA TOOLS AND DESIGN METHODOLOGY 12
VEH6001  HDL AND HIGH LEVEL SYNTHESIS 12
VEH6009  RELIABILITY AND TESTABILITY IN IC DESIGN 12

Core Units of Study (Semester 2)

VEH6004  DIGITAL SYSTEM DESIGN 12
VEH6007  ADVANCED VLSI DESIGN 12
VEH6014  RF AND MIXED SIGNAL DESIGN 12
VEH6018  ANALOG & MIXED SIGNAL DESIGN 12

Assessment: Assessment will be based on a combination of written assignments, laboratory exercises, project work, and formal examinations.

MASTER OF APPLIED PROJECT MANAGEMENT
Course Code: EMPA

Campus: Werribee, City Flinders, Sunbury

Course Objectives: To provide students with a conceptual understanding of relevant models, modes of analysis and techniques for understanding and carrying out project management, contract management and procurement. They will also have developed the ability to apply and evaluate these models, modes of analysis and technique in the context of the legal, ethical and accountability requirements which apply. In addition to the technical skills provided in the course, graduates will have developed strong relevant professional skills as well as strong personal, interpersonal and organisational attributes. By utilising a consultative committee of current project management professionals, the course has been designed to: meet the needs of project managers in industry, equip professionals already in industry with advanced principle and techniques to enable them to assume the role of project manager / and or become effective member of project management teams. adopt a unique approach to manage people, resources, time line and risks to achieve a successful project outcome.

Course Duration: To be advised.

Admission Requirements: A degree or a diploma in any discipline and a minimum of 2 years post-qualification experience. The requirement of qualification may be waived in exceptional circumstance on the basis of experience.

Course Structure: 2 years (full time)
BAO5735 ADVANCED FORECASTING, PLANNING AND CONTROL 12
BMO5401 SPECIAL EVENT MANAGEMENT 12
BCO4656 INFORMATION TECHNOLOGY PROJECT MANAGEMENT 12
BHO6505 MARKETING MANAGEMENT 12
BEOS307 GLOBAL PROCUREMENT 12
BEOS522 PUBLIC SERVICE ECONOMICS 12
Engineering & Construction Units (12 credit points each)
VQB5611 RISK ASSESSMENT AND HUMAN BEHAVIOUR 12
VQB5642 PERFORMANCE CODES METHODOLOGY AND STRUCTURE 12
VQB5621 FIRE GROWTH, DETECTION AND EXTINGUISHMENT 12
VQB5632 SMOKE AND FIRE SPREAD, FIRE SAFETY SYSTEM DESIGN 12
VCP5726 PROJECT PROCUREMENT MANAGEMENT 12
Sustainability (12 credit points each)
RCS5111 PRINCIPLES OF ENVIRONMENTAL SCIENCE AND MANAGEMENT 12
RCS5131 WATER POLLUTION MONITORING & LIQUID WASTE MANAGEMENT 12
RCS5172 SOLID WASTE MANAGEMENT 12
RCS5132 ENVIRONMENTAL LAW AND STANDARDS 2 12
Information Technology (12 credit points each)
RCM6021 LOGISTICS SOLUTIONS AND SYSTEMS 12
RCM5802 INFORMATION SYSTEMS 12
RCM6823 DATABASE DESIGN, MANAGEMENT AND ADMINISTRATION 12
RCM5820 NETWORK OPERATING SYSTEMS ADMINISTRATION 12
VEG6142 MANAGING SOFTWARE PROJECTS 12
VEG6141 SOFTWARE ENGINEERING 12
Sports Management (12 credit points each)
AHBS302 SPORT BUSINESS PROJECT 24
AHB5309 SPORT FACILITY MANAGEMENT 12
Subject AHM6020 not found
AHBS202 SPORT EVENT MANAGEMENT 12

MASTER OF PROJECT MANAGEMENT
Course Code: EMPR

Campus: Werribee, City Flinders, Sunbury

Course Objectives: To provide students with a conceptual understanding of relevant models, modes of analysis and techniques for understanding and procurement. They will also have developed the ability to apply and carrying out project management, contract management and evaluate these models, modes of analysis and technique in the context of the legal, ethical and accountability requirements which apply. In addition to the technical skills provided in the course, graduates will have developed strong relevant professional skills as well as strong personal, interpersonal and organisational attributes. By utilising a consultative committee of current project management professionals, the course has been designed to meet the needs of project managers in industry. equip professionals already in industry with advanced principles and techniques to enable them to assume the role of project manager / and or become effective member of project management teams. adopt a unique approach to manage people, resources, time line and risks to achieve a successful project outcome.

Course Duration: To be advised.

Admission Requirements: A degree or a diploma in any discipline and a minimum of 2 years post-qualification experience. The requirement of qualification may be waived in exceptional circumstance on the basis of experience.

Course Structure: 1.5 years (full time)

Year One - Semester One
VPP5600 PRINCIPLES OF PROJECT MANAGEMENT 12
BMO5519 CONTRACT AND PROCUREMENT MANAGEMENT 12
BMO5519 CONTRACT AND PROCUREMENT MANAGEMENT 12
Plus two electives from Group (b) or (c) as listed below.
Students may exit with a Graduate Certificate in Project Management after successfully completing 4 units (48 credit points).

Semester Two
AHB5205 PROJECT MANAGEMENT AND PEOPLE 12
VPP5630 RESEARCH METHODS 12
Choose one unit from Group (a)
Choose one elective from Group (b)
Students may exit with a Graduate Diploma in Project Management after successfully completing 8 units (96 credit points).

Year Two Semester Three
VPP8060 PROJECT MANAGEMENT SPECIFIC TOPIC (PROJECT WORK - 24CP) 24
Choose two electives from Group (c) and or any other approved VU elective.
Students may exit with a Masters in Project Management after successfully completing the equivalent of 12 units (144 credit points). Students continuing to the Master of Applied Project Management should refer to the structure of the course presented under EMPA

Group A Faculty Based Core Units(12 credit points each)
VPP5610 PROJECT PLANNING AND CONTROL 12
BMO5602 BUSINESS PROJECT MANAGEMENT 12
AHB5201 SPORT RESOURCE MANAGEMENT 12

Group B - Project Management Specific Electives (12 credit points each)
VPP5620 PROJECT STAKEHOLDERS MANAGEMENT 12
VPP5621 PROJECT RISK MANAGEMENT 12
VEH6013 PROJECT MANAGEMENT AND ENTREPRENEURSHIP 12
VPP8050 PROJECT MANAGEMENT SPECIFIC TOPIC (PROJECT WORK - 12CP) 12
VCP5705 PROJECT MANAGEMENT AND INFORMATION TECHNOLOGY 12
VPP5716 PROJECT DEVELOPMENT ANALYSIS AND REVIEW 12
VCP5736 FACILITY LIFE CYCLE COSTING 12
VCP5745 BUILDING REGULATORY MANAGEMENT 12
VPP5630 RESEARCH METHODS 12

Group C - Business Units (12 credit points each)
BMO6630 BUSINESS RESEARCH METHODS 12
BMO6622 MANAGING INNOVATION AND ENTREPRENEURSHIP 12
BNO5522 HUMAN RESOURCES AND EMPLOYEE RELATIONS 12
BNO6510 GOVERNMENT AND BUSINESS RELATIONS 12
### MASTER OF ENGINEERING SCIENCE (TELECOMMUNICATION ENGINEERING)

**Course Code:** EMTE  
**Campus:** Werribee, City Flinders, Sunbury  
**Course Objectives:** (For continuing students only)  
The objective of the course is to provide opportunities for suitably qualified persons to acquire skills and expertise necessary to undertake research and development in the field of telecommunication engineering.  
**Course Duration:** To be advised.

#### Core Units of Study

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<thead>
<tr>
<th>Course Code</th>
<th>Course Title</th>
<th>Credit Points</th>
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<tbody>
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<td>COMMUNICATION SYSTEM MODELING AND SIMULATION 1</td>
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<td>VET5602</td>
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<td>VET6561</td>
<td>LOCAL AREA AND BROADBAND NETWORKS</td>
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### Admission Requirements:
The duration of the course, in normal mode of delivery, is a one year for full-time students and a part-time equivalent for part-time students. Full-fee paying international students are required to have qualifications equivalent to above, and in addition, they must provide evidence of proficiency in English Language, as assessed by; (a) International English Language Testing System - an overall band score of 6+ subject to individual profile, or, (b) Test of English as a Foreign Language - a score of 550+, and a Test of Written English score of 5+.

### Course Structure:
The course is unit based and the completion of the course requires the successful completion of eight (8) units consisting of two core units and six (6) other units (at Master level) of which at least four (4) must be from the Telecommunication Engineering discipline.

### Core Units of Study

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<td>VET6552</td>
<td>COMPUTER NETWORKS AND NETWORKING SOFTWARE</td>
<td>12</td>
</tr>
<tr>
<td>VET6562</td>
<td>DIGITAL SIGNAL PROCESSING</td>
<td>12</td>
</tr>
</tbody>
</table>

### Admission Requirements:
The duration of the course, in normal mode of delivery, is a one year for full-time students and a part-time equivalent for part-time students. Full-fee paying international students are required to have qualifications equivalent to above, and in addition, they must provide evidence of proficiency in English Language, as assessed by; (a) International English Language Testing System - an overall band score of 6+ subject to individual profile, or, (b) Test of English as a Foreign Language - a score of 550+, and a Test of Written English score of 5+.

### Course Structure:
The course is unit based and the completion of the course requires the successful completion of eight (8) units consisting of two core units and six (6) other units (at Master level) of which at least four (4) must be from the Telecommunication Engineering discipline.

### Core Units of Study

<table>
<thead>
<tr>
<th>Course Code</th>
<th>Course Title</th>
<th>Credit Points</th>
</tr>
</thead>
<tbody>
<tr>
<td>VET5611</td>
<td>COMMUNICATION SYSTEM MODELING AND SIMULATION 1</td>
<td>12</td>
</tr>
<tr>
<td>VET5602</td>
<td>COMMUNICATION SYSTEM MODELING AND SIMULATION 2</td>
<td>12</td>
</tr>
<tr>
<td>VET5611</td>
<td>DATA NETWORK ANALYSIS AND DESIGN</td>
<td>12</td>
</tr>
<tr>
<td>VET6521</td>
<td>DIGITAL SWITCHING AND SIGNALLING SYSTEMS</td>
<td>12</td>
</tr>
<tr>
<td>VET6531</td>
<td>WIRELESS COMMUNICATION SUBSYSTEMS</td>
<td>12</td>
</tr>
<tr>
<td>VET6541</td>
<td>MULTIMEDIA AND INTERNET TECHNOLOGY</td>
<td>12</td>
</tr>
<tr>
<td>VET6551</td>
<td>MICROWAVE ELECTRONIC CIRCUIT DESIGN</td>
<td>12</td>
</tr>
<tr>
<td>VET6561</td>
<td>LOCAL AREA AND BROADBAND NETWORKS</td>
<td>12</td>
</tr>
<tr>
<td>VET6512</td>
<td>INTELLIGENT NETWORKS AND NETWORK MANAGEMENT</td>
<td>12</td>
</tr>
<tr>
<td>VET6522</td>
<td>TELECOMMUNICATION TARIFF STRUCTURES AND TELETRAFFIC ENGINEERING</td>
<td>12</td>
</tr>
<tr>
<td>VET6532</td>
<td>MICROWAVE AND SATELLITE COMMUNICATION SYSTEMS</td>
<td>12</td>
</tr>
<tr>
<td>VET6542</td>
<td>MOBILE AND PERSONAL COMMUNICATION SYSTEMS</td>
<td>12</td>
</tr>
<tr>
<td>VET6552</td>
<td>COMPUTER NETWORKS AND NETWORKING SOFTWARE</td>
<td>12</td>
</tr>
<tr>
<td>VET6562</td>
<td>DIGITAL SIGNAL PROCESSING</td>
<td>12</td>
</tr>
</tbody>
</table>
year for full-time students and a part-time equivalent for part-time students. Full-fee paying international students are required to have qualifications equivalent to above, and in addition, they must provide evidence of proficiency in English Language, as assessed by: (a) International English Language Testing System - an overall band score of 6+ subject to individual profile, or, (b) Test of English as a Foreign Language - a score of 550+, and a test of Written English score of 5+.

The course is unit based and the completion of the course requires the successful completion of eight (8) units consisting of two core units and six (6) other units (at Master level) of which at least four (4) must be from the Telecommunication Engineering discipline.

Core Units of Study
Semester 1
VET6510 COMMUNICATION THEORY 12
VET6501 COMMUNICATION SYSTEM MODELING AND SIMULATION 1 12
VET6531 WIRELESS COMMUNICATION SUBSYSTEMS 12
VET6562 DIGITAL SIGNAL PROCESSING 12

Core Units of Study
Semester 2
VET6520 DIGITAL COMMUNICATION PRINCIPLES 12
VET6511 DATA NETWORK ANALYSIS AND DESIGN 12
VET6502 COMMUNICATION SYSTEM MODELING AND SIMULATION 2 12
VET6542 MOBILE AND PERSONAL COMMUNICATION SYSTEMS 12

Assessment
Assessment will be based on a combination of written assignments, laboratory exercises, project work and formal examinations.

GRADUATE CERTIFICATE IN MICROELECTRONIC ENGINEERING
Course Code: ETMI
Campus: Footscray Park

Course Objectives: (For continuing students only)
The general aims of the course are to provide graduates with:
- high levels of both logical and lateral thinking development so that the graduates can lead constructive change through innovation;
- the ability to use a multi-disciplinary engineering philosophy towards the synthesis, design and integration of solutions; and
- a level of professional development in confidence, judgement and experience such that the implementation of proposed solutions proceeds successfully.

The specific aims of the course are to:
- develop integrated circuit design expertise in embedded systems, digital, mixed signal and system-on-chip systems design and verification;
- develop a basic understanding of the device physics, the fabrication process and the testing to the level needed by IC designers;
- develop the advanced technical and algorithmic skills necessary to master state of the art microelectronic technology;
- develop research skills necessary to obtain specialist knowledge of issues pertinent to integrated circuit design;
- cultivate logical and lateral thinking that leads to creation and innovation in the pursuit of solutions to engineering problems.

Course Duration: To be advised.

Admission Requirements: Admission to the course normally requires a four year Bachelor of Engineering degree in Electronic Engineering or Computer Engineering or Communication/Telecommunication Engineering or a four-year Bachelor of Science (Honours) degree in an appropriate field, or an equivalent qualification.

Applicants with a three year Bachelor of Science degree (in appropriate field) or a Bachelor of Engineering degree in another field may also be considered for admission on the condition that they may be required to take additional (preliminary) subjects that will strengthen their knowledge and skills in digital systems, analog electronics and microprocessor systems.

Full fee paying international students must have qualifications which are equivalent to those listed above. In addition they must provide evidence of proficiency in the English language as assessed by:
- IELTS - an overall band score of 6.5, subject to individual profile; or
- TOEFL - a score of 680, and a Test of Written English (TWE) score of 5.5.

A panel comprising of academics from each of the partner universities will carry out student selection into this course.

Course Structure: The duration of the course, in normal mode of delivery, is one and a half years full-time or part-time equivalent for Masters course.

The Master of Engineering course is structured to allow students to exit at different academic levels with either, Graduate Certificate, Graduate Diploma or Master of Engineering qualifications. The completion of the Graduate Certificate in Microelectronic Engineering requires successful completion of four units, Graduate Diploma in Microelectronic Engineering requires successful completion of either eight units or six units and minor project, and Master of Engineering in Microelectronic Engineering requires successful completion of either eight units and major project or ten units and minor project.

Year 1
Core Units
VEH6001 HDL AND HIGH LEVEL SYNTHESIS 12
VEH6002 IC DESIGN 12
VEH6003 EDA TOOLS AND DESIGN METHODOLOGY 12

One approved elective (12 credit points) Electives
VEH6004 DIGITAL SYSTEM DESIGN 12
VEH6007 ADVANCED VLSI DESIGN 12
VEH6008 VLSI DIGITAL SIGNAL PROCESSING SYSTEMS 12
VEH6009 RELIABILITY AND TESTABILITY IN IC DESIGN 12
VEH6014 RF AND MIXED SIGNAL DESIGN 12
VEH6016 VERILOG HDL 12
VEH6017 DIGITAL SYSTEM DESIGN WITH VERILOG HDL 12
VEH6018 ANALOG & MIXED SIGNAL DESIGN 12
VEH6020 MINOR PROJECT 24
VEH6030 MAJOR PROJECT 48

Other Course Specific Notes *Note: All Special Electives for Chip skills program are to be approved by the Course Directors (RMIT & VU).

GRADUATE CERTIFICATE IN MICRO AND NANO ELECTRONICS
Course Code: ETMN
Campus: Footscray Park
Course Objectives: The major role of professional engineers in the Australian
and global workforce is to act as agents for change through the development of technically sound, economically viable and socially acceptable solution to complex and new technical problems. In this context, micro and nano electronic engineers today are faced with many challenges brought about by the rapid advances in computer, multimedia and telecommunication technology. The Graduate Certificate in Micro and Nano Electronics addresses all fundamental aspects of this technology, from high level specification of micro and nano electronic systems, through implementation alternatives, and the effective use of design tools, to realisation of integrated circuits. The course aims to produce engineers with the necessary skills and practical experience to satisfy the requirements of the industry. An important feature of the course is the opportunity it provides for the students to design their own integrated circuits.

The general aims of the course are to provide graduates with:

- high levels of both logical and lateral thinking development so that the graduates can lead constructive change through innovation;
- the ability to use a multi-disciplinary engineering philosophy towards the synthesis, design and integration of solutions; and
- a level of professional development in confidence, judgement and experience such that the implementation of proposed solutions proceeds successfully.

The specific aims of the course are to:

- develop integrated circuit design expertise in embedded systems, digital, mixed signal and system-on-chip systems design and verification;
- develop the advanced technical and algorithmic skills;
- develop research skills necessary to obtain specialist knowledge of issues pertinent to integrated circuit design;
- cultivate logical and lateral thinking that leads to creation and innovation in the pursuit of solutions to engineering problems.

Career Opportunities: Telecommunications, Wireless, Mobile and Network Engineering.

Course Duration: To be advised.

Admission Requirements: Admission to the course normally requires a four year Bachelor of Engineering degree in Electronic Engineering or Computer Engineering or Communication/Telecommunication Engineering or a four-year Bachelor of Science (Honours) degree in an appropriate field, or an equivalent qualification.

Applicants with a three year Bachelor of Science degree (in appropriate field) or a Bachelor of Engineering degree in another field may also be considered for admission on the condition that they may be required to take additional (preliminary) subjects that will strengthen their knowledge and skills in digital systems, analogue electronics and microprocessor systems.

Full fee paying international students must have qualifications which are equivalent to those listed above. In addition they must provide evidence of proficiency in the English language as assessed by:

- IELTS - an overall band score of 6.5, subject to individual profile; or
- TOEFL - a score of 580, and a Test of Written English (TWE) score of 5.5.

Course Structure: The duration of the course, in normal mode of delivery, is one semester full time or part time equivalent.

The completion of the Graduate Certificate in Micro and Nano Electronics requires successful completion of four core units over one semester.

**Graduate Certificate in Project Management**

Course Code: ETPR

Campus: Werribee, City Flinders, Sunbury

Course Objectives: To provide students with a conceptual understanding of relevant models, modes of analysis and techniques for understanding and carrying out project management, contract management and procurement. They will also have developed the ability to apply and evaluate these models, modes of analysis and technique in the context of the legal, ethical and accountability requirements which apply. In addition to the technical skills provided in the course, graduates will have developed strong relevant professional skills as well as strong personal, interpersonal and organisational attributes. By utilising a consultative committee of current project management professionals, the course has been designed to: meet the needs of project managers in industry, equip professionals already in industry with advanced principles and techniques to enable them to assume the role of project manager and or become effective member of project management teams. Adapt a unique approach to manage people, resources, time line and risks to achieve a successful project outcome.

Course Duration: To be advised.

Admission Requirements: A degree or a diploma in any discipline and a minimum of 1 year post-qualification experience. The requirement of qualification may be waived in exceptional circumstance on the basis of experience.

Course Structure: One Semester (full time)

<table>
<thead>
<tr>
<th>Year 1</th>
<th>Core Units of Study</th>
</tr>
</thead>
<tbody>
<tr>
<td>VEH6001</td>
<td>HDL AND HIGH LEVEL SYNTHESIS</td>
</tr>
<tr>
<td>VEH6002</td>
<td>IC DESIGN</td>
</tr>
<tr>
<td>VEH6003</td>
<td>EDA TOOLS AND DESIGN METHODOLOGY</td>
</tr>
<tr>
<td>VEH6009</td>
<td>RELIABILITY AND TESTABILITY IN IC DESIGN</td>
</tr>
</tbody>
</table>

Assessment will be based on a combination of written assignments, laboratory exercises, project work, and formal examinations.

<table>
<thead>
<tr>
<th>Year 1</th>
<th>Course Code</th>
<th>Course Name</th>
<th>Credit Points</th>
</tr>
</thead>
<tbody>
<tr>
<td>VPP5600</td>
<td>PRINCIPLES OF PROJECT MANAGEMENT</td>
<td>12</td>
<td></td>
</tr>
<tr>
<td>BMO5519</td>
<td>CONTRACT AND PROCUREMENT MANAGEMENT</td>
<td>12</td>
<td></td>
</tr>
</tbody>
</table>

Plus two electives from Group (b) or (c) as listed below.

Students may exit with a Graduate Certificate in Project Management after successfully completing 4 units (48 credit points).

Group B - Project Management Specific Electives (12 credit points each)

<table>
<thead>
<tr>
<th>Year 1</th>
<th>Course Code</th>
<th>Course Name</th>
<th>Credit Points</th>
</tr>
</thead>
<tbody>
<tr>
<td>VPP5620</td>
<td>PROJECT STAKEHOLDERS MANAGEMENT</td>
<td>12</td>
<td></td>
</tr>
<tr>
<td>VPP5621</td>
<td>PROJECT RISK MANAGEMENT</td>
<td>12</td>
<td></td>
</tr>
<tr>
<td>VEH6013</td>
<td>PROJECT MANAGEMENT AND ENTREPRENEURSHIP</td>
<td>12</td>
<td></td>
</tr>
<tr>
<td>VPP8050</td>
<td>PROJECT MANAGEMENT SPECIFIC TOPIC (PROJECT WORK - 12CP)</td>
<td>12</td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Year 1</th>
<th>Course Code</th>
<th>Course Name</th>
<th>Credit Points</th>
</tr>
</thead>
<tbody>
<tr>
<td>VCP5705</td>
<td>PROJECT MANAGEMENT AND INFORMATION TECHNOLOGY</td>
<td>12</td>
<td></td>
</tr>
<tr>
<td>VPP5716</td>
<td>PROJECT DEVELOPMENT ANALYSIS AND REVIEW</td>
<td>12</td>
<td></td>
</tr>
<tr>
<td>VCP5736</td>
<td>FACILITY LIFE CYCLE COSTING</td>
<td>12</td>
<td></td>
</tr>
<tr>
<td>VCP5745</td>
<td>BUILDING REGULATORY MANAGEMENT</td>
<td>12</td>
<td></td>
</tr>
<tr>
<td>VPP5630</td>
<td>RESEARCH METHODS</td>
<td>12</td>
<td></td>
</tr>
</tbody>
</table>
The objectives of these courses are to provide opportunities for suitably qualified persons to acquire skills and expertise necessary to undertake research and development in the field of wireless and network engineering. These courses enable students to acquire expertise, and enhance their communication skills to elucidate complex technical problems, and solutions in wireless/mobile and network engineering.

The objective of the course is to provide opportunities for suitably qualified persons to acquire skills and expertise necessary to undertake research and development in the field of Wireless and Network engineering.

Career Opportunities: Micro and Nano Electronics Design and Test.

Course Duration: To be advised.

Admission Requirements: Admission to the course requires a four year Bachelor of Engineering degree in Electrical & Electronic Engineering, or an equivalent. Full-fee paying international students are required to have qualifications equivalent to above, and in addition, they must provide evidence of proficiency in English Language, as assessed by: (a) International English Language Testing System - an overall band score of 6+ subject to individual profile, or, (b) Test of English as a Foreign Language - a score of 550+, and a Test of Written English score of 5+.

Course Structure: The duration of the course, in normal mode of delivery, is a half year for full-time students and a part-time equivalent for part-time students.

The course is unit based and consists of two core units of study, and a set of elective units of study. A unit is worth 12 credit points.

The eligibility for the Graduate Certificate requires the successful completion of 4 units, comprising the two core units of study and two elective units of study.

Units of Study

<table>
<thead>
<tr>
<th>Code</th>
<th>Title</th>
<th>Credit</th>
</tr>
</thead>
<tbody>
<tr>
<td>VET6510</td>
<td>COMMUNICATION THEORY</td>
<td>12</td>
</tr>
<tr>
<td>VET6501</td>
<td>COMMUNICATION SYSTEM MODELING AND SIMULATION 1</td>
<td>12</td>
</tr>
<tr>
<td>VET6531</td>
<td>WIRELESS COMMUNICATION SUBSYSTEMS</td>
<td>12</td>
</tr>
<tr>
<td>VET6562</td>
<td>DIGITAL SIGNAL PROCESSING</td>
<td>12</td>
</tr>
</tbody>
</table>

Assessment will be based on a combination of written assignments, laboratory exercises, project work, and formal examinations.

BACHELOR OF SCIENCE (COMPUTER SCIENCE AND AVIATION)

Course Code: SBCA

Campus: Footscray Park

Course Objectives: (For continuing students only)

The Bachelor of Science in Computer Science and Aviation aims to provide participants with:

- a practical and applied approach to the concepts of computer science and aviation;
- a range of skills in computer science, the mathematical sciences and aeronautical theory subjects at a level sufficient to satisfy the requirements for the issue of a Commercial Pilot’s Licence (CPL), and Instrument Rating.

The specific aims of the course are to provide students with the opportunity to:

- obtain level two accreditation from the Australian Computer Society (ACS) by passing all compulsory computer science subjects, and thus gaining professional recognition;
- develop skills and competence in aviation theory. The course is structured so that students can integrate practical flying training along with their academic studies and if choosing to do so and following the guidelines given, will complete the degree at the same time as qualifying for the issue of a Commercial Pilot’s Licence (CPL) and Command Instrument Rating.

Career Opportunities: Commercial pilot, programmer and software trainer.

Course Duration: To be advised.

Admission Requirements: To qualify for admission to the course an applicant should have successfully completed Year 12 of the Victorian Certificate of Education (VCE), with a study score of at least 20 in English and 22 in Mathematical Methods, or have the equivalent of these qualifications. Completing Specialist Mathematics leads to an ENTER score 3 points higher. Alternatively, entry is via TAFE articulation or under mature age provisions. In addition, students must pass the prescribed medical examination conducted by a Civil Aviation Safety Authority-Approved Aviation Medical Examiner in order to be permitted to commence flying training. Applicants may be interviewed. Consideration by a Faculty panel may be given to relevant work experience, and any other activities undertaken demonstrating ability to achieve in this course. Applicants entering with a Private Pilot’s License or higher will be given full credit for completed aviation subjects and can join the course with advanced standing provided they meet the admission requirements. The course provides existing pilots the opportunity to upgrade their non-flying skills as well as providing them with a degree qualification which is likely to be necessary if they are to further their career in the aviation industry.

Course Structure: The course is offered over three years full-time and part-time equivalent.

Year 1

<table>
<thead>
<tr>
<th>Code</th>
<th>Title</th>
<th>Credit</th>
</tr>
</thead>
<tbody>
<tr>
<td>RCA1010</td>
<td>INTRODUCTORY AVIATION</td>
<td>12</td>
</tr>
<tr>
<td>RCM1115</td>
<td>COMPUTER SYSTEMS AND ARCHITECTURE</td>
<td>12</td>
</tr>
<tr>
<td>RCM1311</td>
<td>PROGRAMMING 1</td>
<td>12</td>
</tr>
<tr>
<td>RCM1711</td>
<td>MATHEMATICAL FOUNDATIONS 1</td>
<td>12</td>
</tr>
<tr>
<td>RCM1114</td>
<td>INTRODUCTION TO COMPUTING AND THE INTERNET</td>
<td>12</td>
</tr>
<tr>
<td>RCM1312</td>
<td>PROGRAMMING 2</td>
<td>12</td>
</tr>
<tr>
<td>RCM1713</td>
<td>DISCRETE MATHEMATICS</td>
<td>12</td>
</tr>
<tr>
<td>RCA1020</td>
<td>BASIC AERONAUTICAL KNOWLEDGE</td>
<td>12</td>
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</tbody>
</table>

Year 2

<table>
<thead>
<tr>
<th>Code</th>
<th>Title</th>
<th>Credit</th>
</tr>
</thead>
<tbody>
<tr>
<td>RCA2020</td>
<td>METEOROLOGY AND HUMAN FACTORS FOR THE CPL</td>
<td>12</td>
</tr>
<tr>
<td>RCA2030</td>
<td>NAVIGATION AND FLIGHT AND AIR LAW FOR THE CPL</td>
<td>12</td>
</tr>
<tr>
<td>RCM2312</td>
<td>SOFTWARE ENGINEERING 1</td>
<td>12</td>
</tr>
</tbody>
</table>
One computing elective from the list below  

RCA2040  AERODYNAMICS FOR THE CPL  
RCA2050  AIRCRAFT GENERAL KNOWLEDGE FOR THE CPL  
RCA2060  OPERATIONS PERFORMANCE AND FLIGHT PLANNING FOR THE CPL  

RCM1211  DATABASE SYSTEMS  

Year 3  

ACE3145  CSM PROFESSIONAL COMMUNICATION  
RCA3010  INSTRUMENT RATING (IREX)  
RCA3030  METEOROLOGY AND HUMAN FACTORS FOR THE ATPL  
RCA3040  FLIGHT PLANNING FOR THE ATPL  
RCA3050  NAVIGATION AND AIR LAW FOR THE ATPL  
RCA3060  AERODYNAMICS AND AIRCRAFT SYSTEMS FOR THE ATPL  
RCA3070  PERFORMANCE AND LOADING FOR THE ATPL  

One Computing Elective from the list below  

Computing Electives  

RCM2111  DATA COMMUNICATIONS AND NETWORKS  
RCM2112  OPERATING SYSTEMS  
RCM2213  COMPUTER GRAPHICS  
RCM2311  OBJECT ORIENTED PROGRAMMING  
RCM2313  SOFTWARE DEVELOPMENT  
RCM2810  ADVANCED INTERNET PROGRAMMING  
RCM2930  3D WEB TECHNOLOGIES  
RCM3960  INTERNET SECURITY  

Other Course Specific Notes To qualify for the award of Bachelor of Science in Computer Science and Aviation, a total of 288 credit points are needed. No stage completions exist for this course.  

Assessment  
The assessment for each subject is detailed in the subject listing.  

BACHELOR OF SCIENCE (COMPUTATIONAL FINANCIAL MATHEMATICS)  

Course Code: SBCF  

Campus: Footscray Park  

Course Objectives: (For continuing students only)  
A great many businesses in the unpredictable world of commerce employ sophisticated and computationally intensive mathematical tools to help corporations determine strategies for market trading and risk profiling. As a result, virtually all major banking, investment and energy companies employ graduates with expertise in mathematics and/or computing. This course is designed to address this demand by coupling a program in computing and mathematical sciences with a focus on finance and risk management. There is no other undergraduate course in the country, and indeed very few internationally, that seeks to combine Finance with both the disciplines of Computer Science and the Mathematical Sciences in this way.  

By coupling a program in computing and mathematical sciences with a focus on finance and risk management. There is no other undergraduate course in the country, and indeed very few internationally, that seeks to combine Finance with both the disciplines of Computer Science and the Mathematical Sciences in this way.  

Course Duration: To be advised.  

Admission Requirements: To qualify for admission to the course an applicant should have successfully completed Year 12 of the Victorian Certificate of Education (VCE), with a study score of at least 20 in English and 22 in Mathematical Methods or have the equivalent of these qualifications. Alternatively, entry is via TAFE articulation or under mature age provisions.  

Course Structure: The course is offered over three years full-time and part-time equivalent.  

Year 1  

BAO1101  ACCOUNTING FOR DECISION MAKING  
RCM1311  PROGRAMMING  
RCM1711  MATHEMATICAL FOUNDATIONS  
RCM1613  APPLIED STATISTICS  
or  
ACE1145  CSM ENGLISH LANGUAGE AND COMMUNICATION  
RCM1211  DATABASE SYSTEMS  
RCM1312  PROGRAMMING  
RCM1712  MATHEMATICAL FOUNDATIONS  
RCM1614  APPLIED STATISTICS  
or  
RCM1613  APPLIED STATISTICS  
*For those doing ACE1145 in Semester One, RCM1614 to be taken over summer semester.  

Year 2  

RCM2312  SOFTWARE ENGINEERING  
RCM2612  FORECASTING  
RCM2712  MATHEMATICS OF CONTINUOUS PROCESSES  
One elective from list A  
RCM2611  LINEAR STATISTICAL MODELS  
RCM2713  MODELLING FOR DECISION MAKING  
RCM2321  MATHEMATICS OF CONTINUOUS PROCESSES  
One elective from list A  

Year 3  

ACE3145  CSM PROFESSIONAL COMMUNICATION  
RCM3413  FINANCIAL MODELLING  
RCM3001  PROJECT  
One elective from list B or list C  
RCM3002  PROJECT  
RCM3711  COMPUTATIONAL METHODS  
One elective from list B  
One elective from list C  
List A
RCM2111  DATA COMMUNICATIONS AND NETWORKS 1 12
RCM2218  DATABASE SYSTEMS 2 12
RCM2311  OBJECT ORIENTED PROGRAMMING 1 12
RCM2313  SOFTWARE DEVELOPMENT 12
RCM2315  ADVANCED PROGRAMMING 12
RCM2614  STATISTICAL DATA MINING 12
RCM2810  INTERNET PROGRAMMING 12
RCM2911  LINEAR OPTIMISATION MODELLING 12
RCM2912  PROJECT SCHEDULING 12
RCM3122  USER INTERFACE DESIGN 12
RCM3311  OBJECT ORIENTED PROGRAMMING 2 12

List B
RCM3316  ADVANCED MATHEMATICAL TECHNIQUES 12
RCM3613  TIME SERIES ANALYSIS 12
RCM3615  MULTIVARIATE STATISTICS 12
RCM3720  CRYPTOGRAPHY, COMPUTER AND NETWORK SECURITY 12
RCM3911  SIMULATION 12

List C
BAO3307  CORPORATE FINANCE 12
BAO3403  INVESTMENT AND PORTFOLIO MANAGEMENT 12
RCM3940  COMPUTATIONAL RISK MODELLING 12

Other Course Specific Notes
To qualify for the award of Bachelor of Science in Computational Financial Mathematics, a total of 288 credit points are needed. No stage completions exist for this course.

BACHELOR OF SCIENCE (COMPUTER SCIENCE)
Course Code: SBCO
Campus: Footscray Park
Course Objectives: (For continuing students only)
The program aims to provide graduates with the analytical ability, factual knowledge and communication skills that will suit them for employment in business and industry in one or more of the following areas:
- computing: programming, software development, systems design and analysis, applications development, technical support.
- statistics: data analysis, quality improvement, market research, forecasting, econometrics.
- operations research: production planning and scheduling, simulation studies, transportation planning, resource allocation.
- financial modelling: investment analysis, project evaluation.
- secondary teaching: mathematics, computer science.

One of the most significant features of the courses is the attempt to involve students in the solution of real world problems. Naturally, problem-solving is a large component of all the subjects taught in the course but, starting in the first year, special emphasis is placed on problem formulation and report writing.

All students undertake at least one industry project in the third year of the course. These projects tend to be related to problems encountered in specific areas of the manufacturing industry, banking or finance, government statutory authorities, or services such as hospitals and local councils.

As evidenced by the high rate of job placement in the areas listed above, graduates have been well-received in industry, commerce and government.

Career Opportunities: Computing: programming, software development, web design, information systems and computer networking; statistics: statistical analysis, quality improvement, market research, forecasting and econometrics, quality management and production planning, secondary teaching, and mathematics and information technology.

Course Duration: To be advised.

Admission Requirements: To qualify for admission to the course an applicant should have successfully completed Year 12 of the Victorian Certificate of Education (VCE), with a study score of at least 20 in English and 22 in Mathematical Methods, or have the equivalent of these qualifications. Completing Specialist Mathematics leads to an ENTER score 3 points higher. Alternatively, entry is via TAFE articulation or under mature age provisions.

Course Structure: The courses are offered on a full-time basis over three years. Summer evening subjects are also offered to assist students to complete their studies.

Computer Science
Year 1
Semester 1
ACE1145  CSM ENGLISH LANGUAGE AND COMMUNICATION 12
RCM1115  COMPUTER SYSTEMS AND ARCHITECTURE 12
RCM1311  PROGRAMMING 1 12
RCM1613  APPLIED STATISTICS 1 12
RCM1711  MATHEMATICAL FOUNDATIONS 1 12

Students can complete ACE1145 or RCM1613 in Semester 1

Semester 2
RCM1614  APPLIED STATISTICS 2 12
or
RCM1114  INTRODUCTION TO COMPUTING AND THE INTERNET 12
RCM1211  DATABASE SYSTEMS 1 12
RCM1312  PROGRAMMING 2 12
RCM1613  APPLIED STATISTICS 1 12
RCM1713  DISCRETE MATHEMATICS 12

Students may complete RCM1114 or RCM1613 in Semester 1. Students who completed ACE1145 in Semester 1 may do RCM1613 in Semester 2

Year 2
Semester 1
ACE3145  CSM PROFESSIONAL COMMUNICATION 12
RCM3001  PROJECT 1 12

Two subjects from lists A, B or C below (each worth 12 credit points) 24 credit points

Semester 2
RCM3002  PROJECT 2 12

RCM2312  SOFTWARE ENGINEERING 1 12

Three electives from lists A, B or C below under SBIA (each worth 12 credit points): 36 credit points Semester 2 Four electives from lists A, B or C below under SBIA (each worth 12 credit points): 48 credit points

Year 3
Semester 1
ACE3145  CSM PROFESSIONAL COMMUNICATION 12
RCM3001  PROJECT 1 12

Two subjects from lists A, B or C below (each worth 12 credit points): 24 credit points

Semester 2
RCM3002  PROJECT 2 12
Three electives from lists A, B or C under SBIA (each worth 12 credit points) 36 credit points

List A
RCM2111 DATA COMMUNICATIONS AND NETWORKS 1 12
RCM2112 OPERATING SYSTEMS 12
RCM2113 MULTIMEDIA SYSTEMS DESIGN 12
RCM2213 COMPUTER GRAPHICS 12
RCM2218 DATABASE SYSTEMS 2 12
RCM2311 OBJECT ORIENTED PROGRAMMING 1 12
RCM2313 SOFTWARE DEVELOPMENT 12
RCM2315 ADVANCED PROGRAMMING 12
RCM2316 NETWORK OPERATING SYSTEM ADMINISTRATION 12
RCM2810 ADVANCED INTERNET PROGRAMMING 12
RCM2930 3D WEB TECHNOLOGIES 12

List B
RCM3111 DATA COMMUNICATIONS & NETWORKS 2 12
RCM3115 ARCHITECTURES FOR ENTERPRISE WIDE COMPUTING 12
RCM3211 DATABASE SYSTEMS 3 12
RCM3311 OBJECT ORIENTED PROGRAMMING 2 12
RCM3312 INTELLIGENT SYSTEMS 12
RCM3313 SOFTWARE ENGINEERING 2 12
RCM3314 OBJECT ORIENTED ANALYSIS AND DESIGN 12
RCM3820 INTERNET COMPUTING USING XML 12
RCM3950 INTERNET DATA MANAGEMENT 12
RCM3960 INTERNET SECURITY 12
RCM3970 COMPUTER GRAPHICS FOR GAME PROGRAMMING 12

List C
RCM1712 MATHEMATICAL FOUNDATIONS 2 12
RCM2321 MATHEMATICS OF CONTINUOUS PROCESSES B 12
RCM2511 IMAGE PROCESSING 1 12
RCM2611 LINEAR STATISTICAL MODELS 12
RCM2612 FORECASTING 12
RCM2614 STATISTICAL DATA MINING 12
RCM2712 MATHEMATICS OF CONTINUOUS PROCESSES A 12
RCM2713 MODELLING FOR DECISION MAKING 12
RCM2911 LINEAR OPTIMISATION MODELLING 12
RCM2912 PROJECT SCHEDULING 12
RCM2915 STOCHASTIC AND COMBINATORIAL OPTIMISATION 12
RCM3511 IMAGE PROCESSING 2 12
RCM3611 REGRESSION ANALYSIS 12
RCM3613 TIME SERIES ANALYSIS 12
RCM3615 MULTIVARIATE STATISTICS 12
RCM3617 QUALITY IMPROVEMENT AND EXPERIMENTAL DESIGN 12
RCM3711 COMPUTATIONAL METHODS 12
RCM3720 CRYPTOGRAPHY, COMPUTER AND NETWORK SECURITY 12
RCM3911 SIMULATION 12

Other Course Specific Notes To qualify for the award of Bachelor of Science in Computer Science, a total of 288 credit points are needed. No stage completions exist for this course.

Additionally, students must complete a minimum of 3 subjects from List A and 5 subjects from List B.

BACHELOR OF SCIENCE (SPECIALISATION)
Course Code: SBSS

Campus: Werribee, Footscray Park, St Albans, Year 1: Footscray Park campus.
Year 2 & 3: Biotechnology and Chemistry specialisations: Werribee campus.
Ecology & Environmental Management specialisation: St. Albans campus.

Course Objectives: The Bachelor of Science (Specialisation) course offers specialisations in the three science disciplines listed below:

- Biotechnology
- Chemistry
- Ecology & Environmental Management Students can choose to specialise in one or two of these science disciplines. This is a three year course with a common first year and a choice of sub-specialisations in the latter two years that allows students the flexibility to add other studies of interest to their specialisation. Sub-specialisations can be chosen from health, engineering, science, arts, business and law. Sub-specialisations are subject to the approval of the course coordinator and may be limited by prerequisite requirements and timetable clashes. Science sub-specialisations are listed below.

- analytical chemistry
- cell biology/microbiology
- community science
- computing
- environmental science
- environmental assessment & analysis
- forensic chemistry
- mathematics
- molecular biology
- statistics. The BSc (specialisation) is industry focussed, offers an intensive hands-on laboratory experience, has modern laboratories with state-of-the-art equipment, provides opportunities for industry projects and placements and overall better prepares students for careers in the science profession. Those students with scientific research in mind can progress into Honours and postgraduate studies (subject to performance in the degree program). Biotechnology Specialisation Biotechnology involves the use of biological cells and their components for the benefit of society. It includes the application of the latest technologies to solve medical, environmental and agricultural problems. The biotechnology specialisation prepares students for exciting careers in cutting edge science. It provides in-depth education in many areas of modern biology including genetic engineering, medical research, cloning, forensic biology, environmental biotechnology, microbiology and biochemistry. There is a strong emphasis on the development of laboratory-based skills for which the university is equipped with state-of-the-art facilities. Chemistry Specialisation The chemistry specialisation has a strong industry focus and will produce graduates that are work ready by combining an extensive laboratory program with training.
on state-of-the-art equipment along with an industry placement program. The course combines studies in analytical, forensic and organic chemistry to develop measurement and investigative skills that are highly sought after by industry. After completing second year, students have the opportunity to work in one of over twenty chemical industries as part of their studies. The laboratory program includes hands-on training in modern analytical techniques including atomic absorption spectrophotometry, inductively coupled plasma optical emission spectrophotometry, gas chromatography including gas chromatography-mass spectrometry, liquid chromatography including liquid chromatography-mass spectrometry, ion chromatography, ultraviolet and visible spectrophotometry, fluorescence spectrophotometry and Fourier transform infrared spectroscopy. Over a million dollars of state-of-the-art analytical equipment has recently been acquired and extensive training on this equipment including applications, theory of operation, optimisation, maintenance and troubleshooting forms a major part of second and third year studies. The laboratory program is designed to give our chemistry graduates a genuine head start into the work force. Ecology &amp; Environmental Management Specialisation Australia and the rest of the world face significant challenges in balancing the needs of a sustainable society while protecting the natural environment. The Ecology and Environmental Management specialisation develops skills in environmental sciences that underpin achievable sustainability strategies. Subjects combine extensive practical experience in the field (terrestrial, marine and freshwater environments) and laboratory, with theory that is based on current research and management practices. In partnership with industry, government agencies, researchers and the community, this specialisation produces graduates that are work-ready. An emphasis on environmental research methodology across all subjects also leads to a high uptake into more highly specialised honours and postgraduate research projects. The Ecology and Environmental Management specialisation develops the knowledge and practical experience for working across social, environmental and economic contexts, to achieve ecological sustainability. Pathways to a Career in Teaching The BSc (Specialisation) offers a selection of units in mathematics and science, including six new innovative community science units, which prepare students wishing to pursue careers as maths/science teachers. The community science units are unique and emphasise learning in the workplace through placements in primary and secondary schools and in community education groups. To qualify for teaching in secondary schools graduates from the BSc (Specialisation) must apply for and complete the Graduate Diploma in Secondary Education.

The Bachelor of Science (Specialisation) will produce graduates with a thorough knowledge of contemporary science for careers in industry, government and education.

The selection of specialisations and sub-specialisations offered allows students the flexibility to customise their learning towards current and future career demands.

Via various learning in the workplace and community strategies the course will make graduates ‘work ready’.

The course allows students wishing to pursue maths/science teaching via the Graduate Diploma in Secondary Education, a number of possibilities with respect to obtaining parts, sub-majors and majors in maths/science teaching specialist areas.

Graduates from this course should be able to:

- locate, manage and use scientific information efficiently and effectively
- solve scientific problems effectively in a range of settings including industry and community
- exhibit high levels of numeracy skills in a range of scientific settings
- communicate effectively in spoken and written forms on a range of scientific and mathematical topics to professional and community groups
- apply an evidence-based research approach to a chosen area of science
- respond with social and cultural awareness within local and global environments
- work autonomously and collaboratively as a professional in both industry and community settings.

Career Opportunities: The Bachelor of Science (Specialisation) will produce graduates with a thorough knowledge of contemporary science for careers in industry, government and education. The flexibility of the course allows students to customise their learning towards current and future career demands.

Biotechnology graduates pursue careers in a variety of areas including medical and pharmaceutical research, forensic science, agriculture and aquaculture, the food and beverage industry and education.

Industries that employ our chemistry graduates include: agricultural chemicals, brewing and wine, chemical analysis, cosmetics, dairy, environmental science and water, food, forensics, horticulture, industrial chemicals, materials and polymers, petrochemicals, pharmaceutical, scientific sales, state and federal government departments.

Careers in ecology and environmental management include: landcare/bushcare coordinator; environment officer or environmental planner; restoration ecology and land management officer; marine and freshwater ecosystem management officer; environmental educator; botanist/zoologist/ecologist and ecological and resource assessor.

The course has been designed in collaboration with the School of Education and the science units offered provides pathways for students to pursue maths/science teaching. To qualify for teaching in secondary schools graduates must apply for and complete an additional fourth year in the Graduate Diploma in Secondary Education.

Course Duration: 3 years

Admission Requirements: To qualify for admission to the course, an applicant must have successfully completed a course of study at year 12 or equivalent.

Year 12 Prerequisites: Units 3 and 4 - study score of at least 20 in English (any) and in mathematics (any).

Selection Mode: Current year 12 applicants: ENTER and two-stage process with a middle-band of approximately 20%.

Middle-band: Completing biology, chemistry, physics or specialist mathematics – an aggregate of 3 points higher per study, to a maximum 9 points.

Applicants who have not completed Year 12 but who possess appropriate educational qualifications work or life experiences which would enable them to successfully undertake the course will be considered for admission. Students who successfully complete the Victoria University Alternative Entry or Foundations Studies courses will be offered access into the course. Further information on how to apply for courses at Victoria University can be found at www.vu.edu.au/future-students.

Course Structure: To graduate with the SBSS Bachelor of Science (Specialisation) students must satisfy the following conditions:

- Successfully complete units of study totalling at least 288 credit points.
- A minimum of 240 credit points in approved units must be taken from the Faculty of Health, Engineering &amp; Science.
- A maximum of 48 credit points in approved units can be taken from either the Faculty of Arts, Education &amp; Human Development or the Faculty of Business &amp; Law.
- Successfully complete either of the following specialisation and sub-specialisation combinations.

Common Year 1 = 96 credit points + Specialisation = 96 credit points + Specialisation = 96 credit points
or
Common Year 1 = 96 credit points + Specialisation = 96 credit points + Sub-specialisation = 48 credit points + Sub-specialisation = 48 credit points
- Units of study at the third year level totalling at least 48 credit points.
- Successfully complete in Year 3 the compulsory unit of study RSS3000 INDUSTRY PROJECT (12 credit points) taken in a chosen specialisation.
Common Year 1

Semester One

- RBF1150  GLOBAL ENVIRONMENTAL ISSUES 12
- RBF1310  BIOLOGY 1 12
- RCS1601  CHEMISTRY 1A 12
- RCM1711  MATHEMATICAL FOUNDATIONS 1 12
- OR
- RCM1712  MATHEMATICAL FOUNDATIONS 2 12

Semester Two

- RBF1320  BIOLOGY 2 12
- RCM1114  INTRODUCTION TO COMPUTING AND THE INTERNET 12
- RCS1602  CHEMISTRY 1B 12
- RCM1614  APPLIED STATISTICS 2 12

OR

List A: Specialisations

- Biotechnology Specialisation

Year 2

Semester One

- RBF2300  MICROBIOLOGY 1 12
- RBF2520  BIOCHEMISTRY 1 12
- Choose Year 2 sem 1 units of another Specialisation from List A
- OR
- Choose Year 2 sem 1 units of two Sub-specialisations from List B

Semester Two

- RBF2330  CELL BIOLOGY 12
- RBF2390  MOLECULAR GENETICS 12
- Choose Year 2 sem 2 units of another Specialisation from List A
- OR
- Choose Year 2 sem 2 units of two Sub-specialisations from List B

Year 3

Choose RSS3000 Industry Project in one Specialisation in consultation with the Course Coordinator.

- RSS3000  INDUSTRY PROJECT 12
- Choose other units to the value of 36 credit points in semesters 1 and 2 from that Specialisation in consultation with the Course Coordinator.

Semester One

- RCS3601  ANALYTICAL CHEMISTRY 3A 12
- RCS3605  FORENSIC METHODS 3A 12
- Choose Year 3 sem 1 units of another Specialisation from List A
- OR
- Choose Year 3 sem 1 units of two Sub-specialisations from List B

Semester Two

- RCS3602  ANALYTICAL CHEMISTRY 3B 12
- RCS3603  MEDICAL CHEMISTRY 3 A 12
- Choose Year 3 sem 2 units of another Specialisation from List A
- OR
- Choose Year 3 sem 2 units of two Sub-specialisations from List B

Ecology & Environmental Management Specialisation

Year 2

Semester One

- RBF1160  AUSTRALIAN LANDSCAPES AND BIOTA 12
- Choose Year 3 sem 1 units of another Specialisation from List A
- OR
- Choose Year 3 sem 1 units of two Sub-specialisations from List B

Semester Two

- RBF1610  AUSTRALIAN LANDSCAPES AND BIOTA 12
- Choose Year 2 sem 1 units of another Specialisation from List A
- OR
- Choose Year 2 sem 1 units of two Sub-specialisations from List B
Semester Two
RBF2610  FUNDAMENTALS OF ECOLOGY  12
RBF2620  AUSTRALIAN PLANTS  12
Choose Year 2 sem 2 units of another Specialisation from List A
OR
Choose Year 2 sem 2 units of two Sub-specialisation from List B
Year 3
Choose RSS3000 Industry Project in one Specialisation in consultation with the
Course Coordinator.
RSS3000  INDUSTRY PROJECT  12
Choose other units to the value of 36 credit points in semesters 1 and 2 from that
Specialisation in consultation with the Course Coordinator.
Semester One
RBF3110  MARINE & FRESHWATER ECOLOGY  12
RBF3620  CONSERVATION AND SUSTAINABILITY  12
Choose Year 3 sem 1 units of another Specialisation from List A
OR
Choose Year 3 sem 1 units of two Sub-specialisations from List B
Semester Two
RBF3210  ENVIRONMENTAL REHABILITATION  12
RBM2201  CONSERVATION GENETICS  12
Choose Year 3 sem 2 units of another Specialisation from List A
OR
Choose Year 3 sem 2 units of two Sub-specialisations from List B
List B: *Sub-specialisations
Molecular Biology
Year 2
RBF2520  BIOCHEMISTRY 1  12
RBF2390  MOLECULAR GENETICS  12
Year 3
RMS3030  GENETIC ENGINEERING  12
RMS3020  GENOMICS, PROTEOMICS AND BIOINFORMATICS  12
Cell Biology/Microbiology
Year 2
RBF2300  MICROBIOLOGY 1  12
RBF2330  CELL BIOLOGY  12
Year Three
RMS3050  ADVANCED MEDICAL MICROBIOLOGY  6
RMS3060  MICROBIAL TECHNOLOGY AND CELL CULTURE  6
RMS3010  BIOPROCESSING APPLICATIONS  12
Analytical Chemistry
Year Two
RCS2601  ANALYTICAL CHEMISTRY 2A  12
RCS2602  ANALYTICAL CHEMISTRY 2B  12
Year Three
RCS3601  ANALYTICAL CHEMISTRY 3A  12
RCS3602  ANALYTICAL CHEMISTRY 3B  12
Forensic Chemistry
Year Two
RCS2100  ORGANIC CHEMISTRY 2A  12
OR
RCS2601  ANALYTICAL CHEMISTRY 2A  12
RCS2503  FORENSIC CHEMISTRY 2  12
Year Three
RCS3605  FORENSIC METHODS 3A  12
RCS2602  ANALYTICAL CHEMISTRY 2B  12
**Community Science
Year Two
SED1101  COMMUNITY BASED GENERAL SCIENCE 1  12
SED1202  COMMUNITY BASED GENERAL SCIENCE 2  12
Year Three
SED2103  COMMUNITY BASED GENERAL SCIENCE 3  12
SED2204  COMMUNITY BASED GENERAL SCIENCE 4  12
Computing
Year Two
REP4100  DATA ACQUISITION  12
RCM2218  DATABASE SYSTEMS 2  12
Year Three
RCM2313  SOFTWARE DEVELOPMENT  12
RCM3312  INTELLIGENT SYSTEMS  12
Environmental Science
Year Two
RBF2640  AUSTRALIAN ANIMALS  12
RBF2620  AUSTRALIAN PLANTS  12
Year Three
RBF3110  MARINE & FRESHWATER ECOLOGY  12
RBF3210  ENVIRONMENTAL REHABILITATION  12
Environmental Assessment and Analysis
(For Ecology & Environmental Management Specialisation students only)
Year Two
RBF3610  BIOSTATISTICS  12
RBF3630  ENVIRONMENTAL IMPACTS AND MONITORING  12
Year Three
RBM3101  GEOGRAPHIC INFORMATION SYSTEMS (GIS) FOR CONSERVATION & HEALTH  12
RBF3650  POLLUTION BIOLOGY  12
The aim of the course is to provide students with a basic grounding in the principles and practice relevant to business in today’s corporate world. It is anticipated that students will transfer into a prescribed business degree program thus deepening

BACHELOR OF SCIENCE (HONOURS) (APPLIED BIOLOGY)
Course Code: SHAB
Campus: St Albans

Course Objectives: An Honours program is available in each of the degree specializations. The aim of the honours program is to provide a course of advanced study at a fourth year level that builds on the knowledge and skills developed at degree level, and to prepare students for postgraduate research by developing skills in working independently, critical analysis of information, problem-solving, devising, designing and conducting experimental work and written and oral communication.

Course Duration: 1 year

Admission Requirements: To qualify for entry to the honours program, applicants must hold a degree or equivalent with major studies in a relevant discipline and should normally have obtained a ‘credit’ average, or equivalent, in the final year of the degree.

Course Structure: The structure of the honours course is as follows:
Semester 1
RBF4001  SCIENCE HONOURS  48
Semester 1
RBF4002  SCIENCE HONOURS  48

(48 credit points per semester)

BACHELOR OF SCIENCE (HONOURS) (COMPUTER SCIENCE)
Course Code: SHCS
Campus: Werribee, City Flinders, Sunbury

Course Objectives: Students who do exceptionally well in their degree studies may be given the opportunity to gain an Honours degree by completing a fourth year of study in a specific field. This year is designed to assist students who may wish to proceed to higher degrees by research, but it also enables students to concentrate their studies more intensely on areas of particular interest. The Honours year requires students to select coursework units from one of the fields of Computer Science, Statistics, and Operations Research. As well, a minor thesis must be completed.

The aim of the course is to provide students with a basic grounding in the principles and practice relevant to business in today’s corporate world. It is anticipated that students will transfer into a prescribed business degree program thus deepening
knowledge in particular areas and developing a specialist skill base.

Course Duration: To be advised.

Admission Requirements: To qualify for admission to the course, an applicant must have successfully completed a course of study at year 12 or equivalent*.

Year 12 Prerequisites: Science (12) and Computer and Science electives (12 credit points each). Non-current Year 12 applicants: ENTER and/or a final band score of at least 6.0.

Selection Mode: Applicants who have not completed Year 12 but who possess appropriate educational qualifications, work or life experiences which would enable them to successfully undertake the course, will be considered for admission. In addition to satisfying the entry requirements for Australian resident students or demonstrating equivalence, overseas students must provide evidence of proficiency in the English language:
- International English Language Testing System - overall score of 6 and no individual band score less than 6.0.

Course Structure:

<table>
<thead>
<tr>
<th>Course Code</th>
<th>Course Title</th>
<th>Credit Points</th>
</tr>
</thead>
<tbody>
<tr>
<td>RCM6106</td>
<td>THESIS (2 UNITS)</td>
<td>24</td>
</tr>
<tr>
<td>RCM6827</td>
<td>RESEARCH PERSPECTIVES IN COMPUTER SCIENCE</td>
<td>12</td>
</tr>
<tr>
<td>RCM6107</td>
<td>THESIS (2 UNITS)</td>
<td>24</td>
</tr>
</tbody>
</table>

AND TWO approved electives (12 credit points each)

BACHELOR OF SCIENCE (HONOURS) COMPUTER SCIENCE AND MATHEMATICS
Course Code: SHHM
Campus: Werribee, City Flinders, Sunbury

Course Objectives: Students who do exceptionally well in their degree studies may be given the opportunity to gain an Honours degree by completing a fourth year of study in a specific field. This year is designed to assist students who may wish to proceed to higher degrees by research, but it also enables students to concentrate their studies more intensely on areas of particular interest. The Honours year requires students to select coursework units from one of the fields of Computer Science, Statistics, and Operations Research. As well, a minor thesis must be completed.

To qualify for entry to the Honours program the applicant should have completed the requirements for a pass degree in computer science. Applicants must be competent in tertiary level mathematics and experience will be considered.

Course Structure: The course will be offered on a full-time basis over one year or part-time equivalent.

| Semester 1 | | |
|-------------| | |
| RPH4411     | PHYSICS 4 (HONOURS) | 48 |

| Semester 2 | | |
|-------------| | |
| RPH4412     | PHYSICS 4 (HONOURS) | 48 |

Academic Progression

A student will not be allowed to repeat the Honours year or any component of it without the permission of the Course Coordinator.

MASTER OF SCIENCE (COMPUTER SCIENCE)
Course Code: SMCS
Campus: Werribee, City Flinders, Sunbury

Course Objectives: The Masters program develops a sound theoretical knowledge of contemporary Computer Science techniques and/or the techniques in one specified field of study from the Mathematical Sciences. Emphasis is also placed on the application of these techniques in areas of business and industry.

The Masters program develops a sound theoretical knowledge of contemporary Computer Science techniques and/or the techniques in one specified field of study from the Mathematical Sciences. Emphasis is also placed on the application of these techniques in areas of business and industry.

Course Duration: To be advised.

Admission Requirements: To qualify for admission to the course an applicant must have successfully completed an appropriate degree or an equivalent combination of qualifications and experience. Applicants must be competent in tertiary level mathematics and computer science. Applicants with any of the following qualifications may apply for credits against specific coursework subjects up to the indicated maximum.

(a) A degree in computer science (4). (b) A four year honours degree in computer science (12). (c) A pass degree (without a major in computer science) followed by an
appropriate graduate diploma (8). (d) A combination of qualifications and experience equivalent to (a), (b), or (c) above.

Course Structure: The course is offered on a full-time basis over two years or on an equivalent part-time basis.

Year 1
Semester 1 4 x Approved Electives in Computer Science (12 credit points each)
Semester 2 4 x Approved Electives in Computer Science (12 credit points each)

Year 2
Semester 1 4 x Approved Electives (12 credit points each)
Semester 2
RCM6103 THERAPY (4 UNITS) 48
OR
RCM6102 THERAPY (2 UNITS) 24
AND 2 Approved Electives (12 credit points each) Elective List
RCM5601 FORECASTING 12
RCM5602 QUALITY MANAGEMENT AND STATISTICS 12
RCM5803 DATA STRUCTURES AND PROGRAMMING 12
RCM6105 THESIS (1 UNIT) 12
RCM6606 TIME SERIES ANALYSIS 12
RCM6607 STATISTICAL COMPUTING 12
RCM6819 USER INTERFACE DESIGN 12
RCM6821 DECISION SUPPORT TECHNOLOGY 12
RCM6822 INTERNET PROGRAMMING 12
RCM5814 COMPUTER GRAPHICS 12
RCM6820 DISTRIBUTED SYSTEMS 12
RCM6823 DATABASE DESIGN, MANAGEMENT AND ADMINISTRATION 12
RCM6825 MULTIMEDIA SYSTEMS DESIGN AND DEVELOPMENT 12
RCM6902 MATHEMATICAL PROGRAMMING 1 12
RCM6904 SIMULATION 12
RCM6905 SEQUENCING AND SCHEDULING 12
RCM6906 OPTIMISATION TECHNIQUES 12

Students must obtain a pass in 14 semester units and a thesis equivalent to two semester units; or 12 semester units and a thesis equivalent to four semester units.

For the award of MSc in Computer Science, at least 8 units must be selected from the Computer Science stream. For the award of MSc in Computer and Mathematical Sciences, at least 6 units must be selected from the Mathematical Sciences stream.

Thesis
Where possible the candidate will be encouraged to choose a topic related to his/her own work situation.

RCM6102 THERAPY (2 UNITS) 24
RCM6103 THERAPY (4 UNITS) 48

MASTER OF SCIENCE IN LOGISTICS SYSTEMS AND SUPPORT
Course Code: SMLS

Campus: Werribee, City Flinders, Sunbury

Course Objectives: The growth in world trade is increasing in size and dynamics and the trend is likely to continue. In particular the Asia Pacific region in which Australia is located has the most dynamic trend. As a profession, Logistics is core to the efficiency of such growth and as a consequence there is a growing need for expertise in the systems and technical support associated with the industry.

The Logistics industry is highly dependent on the development and maintenance of the systems associated with movement of materials and the associated services. The logistics/engineering systems deliver the operating reliability and maintenance effectiveness and delivery of service.

The assessment of professionalism within the industry is directly related to the logistics systems and support that an enterprise can provide to its own functions as well as those of its customer and suppliers.

The Master of Science in Logistics Systems and Support provides specialised logistics education for those professionals working in the senior logistics positions and related operations businesses. This includes senior technical managers and executives in logistics, manufacturing and service organisations and those aspiring to those roles.

The course brings together a range of knowledge and skills that are needed by such managers. It provides a strong foundation in technical, logistics and people skills. It has attractions not only in the logistics industry but also manufacturing, mining, utilities, information technology, defence and service operations.

Course Structure: To be advised.

Admission Requirements: To qualify for admission to the course an applicant must have normally completed successfully a relevant degree with good grades, or a post graduate diploma plus adequate work experience in an employment associated with logistics or transport management. Students who gain admission may be required to undertake additional or preliminary coursework as directed by the Course Coordinator. For international students the requirements are the same as for all School of Computer Science and Mathematics PG courses. Overseas students must provide evidence of proficiency in the English Language as follows: International English Testing System - a minimum overall test score of 6.5 and no individual band score of less than 6.0.

Course Structure: 18 months

BEOS306 SUPPLY NETWORKS AND LOGISTICS STRATEGY 12
RCM6021 LOGISTICS SOLUTIONS AND SYSTEMS 12
RCM6905 SEQUENCING AND SCHEDULING 12
RCM6906 OPTIMISATION TECHNIQUES 12
BEOS617 BUSINESS RISK AND PLANNING 12
RCM5602 QUALITY MANAGEMENT AND STATISTICS 12
RCM6901 RELIABILITY AND MAINTENANCE 12
BMOS5520 ORGANISATION ANALYSIS AND BEHAVIOUR 12
RCM5404 FINANCIAL DECISION SUPPORT SYSTEMS 12
RCM6607 STATISTICAL COMPUTING 12
RCM6102 THERAPY (2 UNITS) 24
OR
RCM6104 THERAPY (1 UNIT) 12
RCM6105 THERAPY (1 UNIT) 12
SUBJECTS

Below are subject details for courses offered by the School of Engineering and Science in 2010. IMPORTANT NOTICE: Not all elective subjects for courses offered by the school are listed below. There are numerous elective possibilities that the school can choose to offer and those selected will vary from year to year. Details of these electives will be advised by the school.

RBF1310 BIOLOGY 1

Locations: Footscray Park,
Pre-requisites: Nil.
Descriptions: This unit introduces students to the structure and function of living organisms, with an emphasis on animals. Topics covered include cell biology; internal transport mechanisms; sensory systems; gas exchange systems; digestive systems; support and movement; defence against pathogens; and homeostasis.
Credit Points: 12
Learning Outcomes: On successful completion of this unit, students are expected to be able to:
• Identify major organelles and structures in a typical cell;
• Use a microscope in a laboratory setting;
• Describe the relationship between surface area and volume in a cell and explain its significance in biological systems;
• Describe processes in major organ systems;
• Identify key structures of the mammalian heart and eye;
• Gather and interpret data in a laboratory setting.
Class Contact: Sixty (60) hours or equivalent for one semester comprising lectures and practical classes.
Assessment: In order to obtain a pass or higher in this graded unit, normally all components of assessment must be passed. Essay Essay 10%

RBF1320 BIOLOGY 2

Locations: Footscray Park,
Pre-requisites: Nil.
Descriptions: This unit complements material covered in RBF1310 Biology 1. Topics covered include structure and function of plants; photosynthesis and cell respiration; the cell cycle; principles of genetics; evolution and biodiversity; and basic population and community ecology.
Credit Points: 12
Learning Outcomes: On successful completion of this unit, students are expected to be able to:
• Identify structures and major cell types in flowering plants;
• Describe the flow of water and nutrients through the vascular system of a flowering plant;
• Construct and use a simple dichotomous key;
• Compare and contrast the effects of genetic drift and selection on populations;
• Perform and write up experiments in laboratory settings.
Class Contact: Sixty (60) hours or equivalent for one semester comprising lectures and practical classes.
Assessment: In order to obtain a pass or higher in this graded unit, normally all components of assessment must be passed. Essay Essay 10%

RBF2242 FOOD PRESERVATION

Locations: Werribee,
Pre-requisites: RBF1140 - INTRODUCTION TO FOOD, NUTRITION AND HEALTH 1 or equivalent.
Credit Points: 12
Learning Outcomes: On successful completion of this unit, students are expected to be able to:
• Discuss different methods of spoilage of various food groups;
• Explain different methods of preservation and fermentation;
• Suggest appropriate methods of preservation including the concept of hurdles to control a given deterioration;
• Describe the issues associated with food packaging.
Class Contact: Forty-eight (48) hours or equivalent for one semester comprising comprising lectures and tutorials.
Assessment: In order to obtain a pass or higher in this graded unit, normally all components of assessment must be passed. Assignment and tests 30%

RBF2243 FOOD PROCESSING OPERATIONS

Locations: Werribee,
Pre-requisites: RBF1140 - INTRODUCTION TO FOOD, NUTRITION AND HEALTH 1 or equivalent.
Credit Points: To be advised.
Learning Outcomes: On successful completion of this unit, students are expected to be able to:
• Discuss different methods of spoilage of various food groups;
• Explain different methods of preservation and fermentation;
• Suggest appropriate methods of preservation including the concept of hurdles to control a given deterioration;
• Describe the issues associated with food packaging.
RBF2300 MICROBIOLOGY 1

Locations: Werribee, St Albans.
Pre-requisites: RBF1310 Biology 1.


Credit Points: 12

Learning Outcomes: To be advised.

Class Contact: Five hours per week comprising three hours of lectures per week and eight three hour laboratory classes during the semester.

Required Reading: To be advised by lecturer.

Assessment: Assignment, 20%; practical work, 25%; examination, 55%.

RBF2310 MICROBIOLOGY 2

Locations: Werribee, St Albans.
Pre-requisites: RBF2300 Microbiology 1.

Descriptions: A subject that aims to build on material covered in RBF2300 Microbiology 1 to further develop the student's knowledge of microbiology. Topics include: introduction to microbial ecology, evolutionary and ecological aspects of interactions between microbes and higher organisms, microbiota associated with selected animals and plants, non-specific host defences in a range of plants and animals, entry of pathogens into a range of plant and animal hosts, pathogenic effects in a range of plant and animal hosts, clinical and diagnostic microbiology, basic principles of public health microbiology.

Credit Points: 12

Learning Outcomes: To be advised.

Class Contact: Six hours per week comprising three hours of lectures, two hours of laboratory work and one one-hour tutorial for one semester.

Required Reading: To be advised by lecturer.

Assessment: Assignment, 20%; practical work, 25%; final examination, 55%.

RBF2330 CELL BIOLOGY

Locations: Werribee, St Albans.
Pre-requisites: RBF1310 Biology 1 or RBM1528 Human Physiology 2 or equivalent.

Descriptions: This unit complements units in Biochemistry and provides a strong foundation for students moving into areas such as: biotechnology, molecular biology, medical sciences and environmental sciences. Topics include: Eukaryotic cell organisation (covering all of the major organelles) and compartmentalisation; membranes and transport mechanisms; the cell surface; intracellular targeting of proteins including cotranslational and post translational pathways; transport and docking of vesicles; motor proteins, movement and the cytoskeleton; communication between cells including receptors and signal transduction pathways; cell cycle and its regulation; apoptosis; the molecular basis of cancer.

Credit Points: 12

Learning Outcomes: To be advised.

Class Contact: Six hours per week, comprising three hours of lectures and tutorials.

Required Reading: To be advised by lecturer.

Assessment: Assignment Assignments 40%

RBF2520 BIOCHEMISTRY 1

Locations: Werribee, St Albans.
Pre-requisites: RBF1310 Biology 1 and RCS1601 Chemistry 1A or equivalent.

Descriptions: This subject aims to provide a general introduction to biochemistry and includes: structure and functions of carbohydrates, lipids, proteins and nucleic acids. Biological membranes. Enzymes: kinetics and regulatory enzymes. Metabolism: bioenergetics, glycolysis, citric acid cycle, chemiosmosis, gluconeogenesis, amino acid metabolism, fatty acid metabolism, photosynthesis. DNA: structure, replication, expression, and basic gene cloning.

Credit Points: 12

Learning Outcomes: To be advised.

Class Contact: Six hours per week, comprising three hours of lectures, two hours of laboratory, and one hour of tutorial work for one semester.

Required Reading: To be advised by lecturer.

Assessment: Practical work, 30%; final examination, 55%; assignment/test, 15%.

RBF2530 BIOCHEMISTRY 2

Locations: Werribee.
Pre-requisites: SBF2520 Biochemistry 1.

Descriptions: The aim of this subject is to expand on material covered in Biochemistry 1, and complement the Molecular Cell Biology and Microbiology subjects. Along with Biochemistry 1, this subject will provide a solid foundation in biochemical principles, reactions and applications. Topics covered include bioenergetics, the pentose phosphate pathway, amino acid and nucleotide metabolism, photosynthesis, aspects of plant metabolism and biochemistry of neurotransmitters. Other topics covered will include the structure and function of biological molecules, lignid binding and conformational changes, mechanisms of enzyme action, advanced enzyme kinetics, regulation of biochemical systems such as hormonal and transcriptional control. Applied aspects of biochemistry will also be considered.

Credit Points: 12

Learning Outcomes: To be advised.

Class Contact: Six hours per week, comprising three hours of lectures, two hours of laboratory work and one hour tutorial for one semester.

Required Reading: To be advised by lecturer.
RBF5120 FUNDAMENTALS OF FOOD SAFETY AND QUALITY ASSURANCE

Locations: Werribee,

Pre-requisites: A completion of an undergraduate science degree or other relevant related disciplines.

Descriptions: This unit provides an introduction to the concepts and principles of food safety and quality assurance, food legislation, food standards, sensory and objective evaluation of foods and conduct of objective and sensory evaluation tests on foods. The unit covers: sensory attributes and sensory evaluation; sensory perception, use of sensory and objective evaluation in quality control and product development, experimental design and analysis, questionnaire design, taste panels, shelf-life assessment; food law: Australian and International food standards codes, food hygiene regulations, micro-biological standards and codes of practice, the development and underlying principles of food standards, Codex standards, export standards; food additives, types, functions, toxicological evaluation and regulations governing usage; toxic substances and contaminants; hygiene and sanitation in food processing and production, techniques for evaluation of food processing plants; quality assurance principles and systems: parameters of food quality and its evaluation and control, role of quality assurance, concepts of total quality control (TQC) and total quality management (TQM), food manufacturing practice, sampling plans, specification writing, hazard analysis and critical control point (HACCP) concept, product recall procedures, Australian and International quality systems.

Credit Points: 12

Learning Outcomes: On successful completion of this unit, students are anticipated to apply principles of quality assurance and quality management systems in the food manufacturing and distribution to produce safe foods that would meet quality and legal requirements. Students after completion are expected to be able to appraise principles of chemical analysis, microbiology and statistical control techniques to ensure the quality and safety of food.

Class Contact: The equivalent of 48 hours for one semester or 6 hrs per week comprising of lectures/tutorial/practice.


Assessment: Assignment and tests 30%, practical work 20%, final examination 40%.

RBF5140 CHEMISTRY OF FOODS

Locations: Werribee,

Pre-requisites: A completion of an undergraduate science degree or other relevant related disciplines.

Descriptions: The basic components forming the structure of food products consist of the natural materials assembled in relationships that can be altered by the presence of additives, ingredients and processing. The unit covers the composition and macrostructure of food, and the relationships between the basic components and structure and the additives. This will include the interactions between emulsifiers and flavours within a food matrix, and interactions between water-proteins, water,
lipids, protein-proteins, protein-lipids, protein-carbohydrates, and carbohydrate-lipids. This unit will also address the influence of processing on basic components and interactions among food components.

Credit Points: 12

Learning Outcomes: On successful completion of this unit, students are expected to be able to generalize and assess the structural and compositional features of food macromolecules; to predict functional properties of food molecules based on their chemical properties, to recognize and evaluate the key chemical features of food systems and to develop novel food systems based on complex interactions of their main macromolecules.

Class Contact: The equivalent of 60 hours or five hours per week comprising of three hrs of lectures and two hrs of tutorials/practical work.


Assessment: Practical work, 20%; Assignment (3000 words) and tests 40%; Final examination (1x3 hrs) 40%.

RBF5230 MANAGING FOOD ENTERPRISES

Locations: Werribee,

Pre-requisites: A completion of an undergraduate science degree or other relevant related disciplines.

Descriptions: For the purposes of this unit the term food industry captures all supply chain actors, large corporations and small-to-medium scale enterprises that engage in the production, processing and marketing of bulk, processed and ready-to-consume foods. This unit provides insights into the unique opportunities and challenges in the food business environment and how these opportunities and challenges can be managed by food enterprises. On completing this unit, students are expected to empathize the dynamics and trends in the food industry environment and to understand tested and tried organizational and structural capabilities to efficiently manage food enterprises.

Credit Points: 12

Learning Outcomes: On successful completion of this unit, students are expected to comprehend challenges facing the Australian and the global food economy; to fully assess food industry dynamics that influence and shape food industry and to devise and implement food enterprise environments strategies, plans and actions to manage business operations in this dynamic environment.

Class Contact: The equivalent of 48 hours for one semester or 4 hrs per week comprising of three hours of lectures and two hrs of tutorials/practical work.


Assessment: Class presentation (15%) - Written, three hour, open book final examination (50%) - Syndicate project (3,000 - 4,000 words) (35%)

Assessment: Assignments and tests 40%, practical work 20%, final examination 40%.

RBMA11 GEOGRAPHIC INFORMATION SYSTEMS (GIS) FOR CONSERVATION & HEALTH

Locations: St Albans,

Pre-requisites: Completion of core second year units in Ecology and Sustainability (RBF2610 Fundamentals of Ecology, RBF2620 Australian animals, RBF2620 Australian Plants) or in Biomedical Sciences (RBMA2260 Diet and Nutrition, RBMA2530 Pathophysiology 1, RBMA2540 Pathophysiology 2).

Descriptions: Types of data. GIS software applications in common use. Methods for data collection and entry, specific plotting and mapping of integrated data. The interpretation of complex temporal and spatial data. Practical applications of GIS including the use of data from programs that monitor and manage endangered species in the Australian context. Computer simulations and the formulation of models to predict the outcome of the effects of habitat degradation, conservation management activities or health service provision.

Credit Points: 12

Learning Outcomes: The development of high level skills in locating, processing and evaluating information relevant to natural resource management, conservation and public health. The development of high level problem solving and decision-making abilities based on the interpretation of complex information. An ability to communicate complex information in written form.

Class Contact: Four hours per week comprising two hours of lecture and two hours of workshops providing hands on experience with data collection and GIS.

Required Reading: Textbooks for modules, specific readings from the scientific literature along with material based on current research by University personnel and Associates. Excerpts from relevant software manuals will be provided.

Assessment: Laboratory reports and computer exercises (30%). CGA: P3, I3, O2, C2. Written Assignment of 2500 words based on analysis and discussion of GIS data: 40%: I3, P3, W3, A3. Examination (1.5 hours): 30%: The examination will assess the main theoretical concepts underlying the applications of GIS discussed throughout the unit. CGA: I3, A2

RCA1010 INTRODUCTORY AVIATION

Locations: Footscray Park,

Pre-requisites: Nil.

Descriptions: Aerodynamics and theory of flight, flight control systems, basic instruments. Domestic and international flight procedures, social structure of the regulatory system, domestic and international. Domestic legal rules, international treaties, domestic safety systems and safety experience. International safety experience.

Credit Points: 12

Learning Outcomes: To be advised.

Class Contact: One four hour seminar per week for one semester.

Required Reading: As set by the lecturer in charge.

Assessment: One major assignment 30% and one final examination 70%.

RCA1020 BASIC AERONAUTICAL KNOWLEDGE

Locations: Footscray Park,

Pre-requisites: RCA1010 (The Civil Aviation Safety Authority also expects that students will have flown five hours before attempting this subject).

Descriptions: Basic Aeronautics, engineering and mechanics sufficient to pass the BAK test as required by the CASA.

Credit Points: 12

Learning Outcomes: To be advised.

Class Contact: The equivalent of one four hour seminar per week for one semester. A concentrated mode of delivery may be used. Students may be required to attend classes off campus. Students should be aware that they are expected to obtain five hours flying experience on their own account before attempting the examination subject.

Required Reading: As required by the Lecturer in charge.

Assessment: One final (principally multiple choice) examination worth 100% as required by the Civil Aviation Safety Authority.

RCA2020 METEOROLOGY AND HUMAN FACTORS FOR THE CPL

Locations: Footscray Park,

Pre-requisites: RCA1020 Basic Aeronautical Knowledge (the Civil Aviation Safety Authority requires students to complete the General Flying Proficiency Test before attempting this subject).

Descriptions: Aircraft navigation theory, and legal theory as required for the Commercial Pilot’s Licence theory subjects ‘CHUF Human Factors (Aeroplane and Helicopter) for the CPL’ and ‘CMET Meteorology (Aeroplane and Helicopter) for the CPL’ examined by the Civil Aviation Safety Authority.

Credit Points: 12

Learning Outcomes: To be advised.

Class Contact: The equivalent of one four hour seminar per week for one semester. Students may be required to undertake multiple seminars each week, for less than one semester.

Required Reading: As required by the Lecturer in charge.

Assessment: Two Multiple Choice Examination as required by the Civil Aviation Safety Authority.

RCA2030 NAVIGATION AND FLIGHT AND AIR LAW FOR THE CPL

Locations: Footscray Park,

Pre-requisites: RCA1020 Basic Aeronautical Knowledge (the Civil Aviation Safety Authority requires students to complete the General Flying Proficiency Test before attempting this subject).

Descriptions: Aircraft navigation theory, and legal theory as required for the Commercial Pilot’s Licence theory subjects ‘CHUF Human Factors (Aeroplane and Helicopter) for the CPL’ and ‘CLWA Flight rules and Air Law (Aeroplane and Helicopter) for the CPL’ examined by the Civil Aviation Safety Authority.

Credit Points: 12

Learning Outcomes: To be advised.

Class Contact: The equivalent of one four hour seminar per week for one semester. Students may be required to undertake multiple seminars each week, for less than one semester.

Required Reading: As advised by the Lecturer in Charge of the subject.

Assessment: Two Multiple Choice Examination as required by the Civil Aviation Safety Authority.
RCA2040 AERODYNAMICS FOR THE CPL

Locations: Footscray Park,

Pre-requisites: RCA1020 Basic Aeronautical Knowledge (the Civil Aviation Safety Authority requires students to complete the General Flying Proficiency Test before attempting this subject).

Descriptions: Aircraft navigation theory, and legal theory as required for the Commercial Pilot’s Licence theory subjects ‘CADA Aerodynamics (Aeroplane and Helicopter)’ for the CPL examined by the Civil Aviation Safety Authority.

Credit Points: 12

Learning Outcomes: To be advised.

Class Contact: The equivalent of one four hour seminar per week for one semester. Students may be required to undertake multiple seminars each week, for less than one semester.

Required Reading: As advised by the Lecturer in Charge of the subject.

Assessment: Two Multiple Choice Examination as required by the Civil Aviation Safety Authority.

RCA2050 AIRCRAFT GENERAL KNOWLEDGE FOR THE CPL

Locations: Footscray Park,

Pre-requisites: RCA1020 Basic Aeronautical Knowledge (the Civil Aviation Safety Authority requires students to complete the General Flying Proficiency Test before attempting this subject).

Descriptions: Aircraft navigation theory, and legal theory as required for the Commercial Pilot’s Licence theory subjects ‘CSYA Aircraft General Knowledge for the CPL’ examined by the Civil Aviation Safety Authority.

Credit Points: 12

Learning Outcomes: To be advised.

Class Contact: The equivalent of one four hour seminar per week for one semester. Students may be required to undertake multiple seminars each week, for less than one semester.

Required Reading: As advised by the Lecturer in Charge of the subject.

Assessment: One Multiple Choice Examination as required by the Civil Aviation Safety Authority.

RCA2060 OPERATIONS PERFORMANCE AND FLIGHT PLANNING FOR THE CPL

Locations: Footscray Park,

Pre-requisites: RCA1020 Basic Aeronautical Knowledge (the Civil Aviation Safety Authority requires students to complete the General Flying Proficiency Test before attempting this subject).

Descriptions: Aircraft navigation theory, and flight planning as required for the Commercial Pilot’s Licence theory subject ‘CFPA CPL Operations Performance and Flight Planning’ examined by the Civil Aviation Safety Authority.

Credit Points: 12

Learning Outcomes: To be advised.

Class Contact: The equivalent of one four hour seminar per week for one semester. Students may be required to undertake multiple seminars each week, for less than one semester.

Required Reading: As advised by the Lecturer in Charge of the subject.

Assessment: One Multiple Choice Examination as required by the Civil Aviation Safety Authority.

RCA3010 INSTRUMENT RATING (IREX)

Locations: Footscray Park,

Pre-requisites: To be advised.

Descriptions: Aircraft flight planning theory sufficient to complete the IREX examination set by the Civil Aviation Safety Authority.

Credit Points: 12

Learning Outcomes: To be advised.

Class Contact: 2 x three hour workshops per week for one semester, or equivalent.


Assessment: Examination as required by the Civil Aviation Safety Authority.

RCA3030 METEOROLOGY AND HUMAN FATORS FOR THE ATPL

Locations: Footscray Park,

Pre-requisites: RCA2020 - METEOROLOGY AND HUMAN FATORS FOR THE CPL

Descriptions: Meteorology and Human Factors sufficient to meet the requirements of the CASA examinations in these topics.

Credit Points: 12

Learning Outcomes: To be advised.

Class Contact: The equivalent of one three hour seminar each week for one semester.

Required Reading: To be advised by lecturer.

Assessment: One 90 minute multiple choice examination and one 60 minute multiple choice examination.

RCA3040 FLIGHT PLANNING FOR THE ATPL

Locations: Footscray Park,


Descriptions: Aircraft flight planning theory sufficient to pass the Air Transport Pilot’s Licence theory subject ‘ATPL Flight Planning’ examined by the Civil Aviation Safety Authority.

Credit Points: 12

Learning Outcomes: To be advised.

Class Contact: 1 x three hour workshops per week for one semester, or equivalent.

Required Reading: Thom, T. et al, 2000, Aeroplane Operations Performance and Planning for the Air Transport Pilot, Aviation Theory Centre, Melbourne. Subject study notes as provided by the subject lecturer.

Assessment: Examination as required by the Civil Aviation Safety Authority.

RCA3050 NAVIGATION AND AIR LAW FOR THE ATPL

Locations: Footscray Park,

Pre-requisites: RCA2020 - METEOROLOGY AND HUMAN FATORS FOR THE CPL

Descriptions: Navigation and flight and air law sufficient to meet the requirements of the CASA examinations in these topics.

Credit Points: 12

Learning Outcomes: To be advised.
Class Contact: The equivalent of one three hour seminar each week for one semester.

Required Reading: To be advised by lecturer.

Assessment: Two 90 minute multiple choice examinations.

RCA3060 AERODYNAMICS AND AIRCRAFT SYSTEMS FOR THE ATPL

Locations: Footscray Park,

Pre-requisites: TBA

Descriptions: Aircraft aerodynamics and systems theory sufficient to pass the Air Transport Pilot’s Licence theory subject ‘ATPL Aerodynamics and Systems’ examined by the Civil Aviation Safety Authority

Credit Points: 12

Learning Outcomes: To be advised.

Class Contact: 1 x three hour workshop per week for one semester or equivalent.

Required Reading: Thom, T. et al, 2000, Aeroplane Operations Performance and Planning for the Air Transport Pilot, Aviation Theory Centre, Melbourne. Subject study notes as provided by the subject lecturer.

Assessment: Examination as required by the Civil Aviation Safety Authority.

RCA3070 PERFORMANCE AND LOADING FOR THE ATPL

Locations: Footscray Park,

Pre-requisites: To be advised.

Descriptions: Aircraft performance theory, and loading theory sufficient to pass the Air Transport Pilot’s Licence theory subject ‘ATPL Performance and Loading’ examined by the Civil Aviation Safety Authority.

Credit Points: 12

Learning Outcomes: To be advised.

Class Contact: 1 x three hour workshop per week for one semester or equivalent.


Assessment: Examination as required by the Civil Aviation Safety Authority.

RCM1114 INTRODUCTION TO COMPUTING AND THE INTERNET

Locations: Footscray Park,

Pre-requisites: Nil


Credit Points: 12

Learning Outcomes: On successful completion of this unit, students are expected to be able to:

- Demonstrate sound Internet computing skills;
- Design and develop Web sites;
- Locate relevant Web-based resources;
- Identify and discuss social, ethical and Intellectual Property (IP) issues arising from computing in society.

Class Contact: Forty-eight (48) hours or equivalent for one semester comprising lectures and laboratory/tutorials.


Assessment: In order to obtain a pass or higher in this graded unit, normally all components of assessment must be passed. Assignment Laboratory Work 30%

RCM1115 COMPUTER SYSTEMS AND ARCHITECTURE

Locations: Footscray Park, Hong Kong

Pre-requisites: Nil.


Credit Points: 12

Learning Outcomes: To be advised.

Class Contact: Four hours per week for one semester, comprising two one-hour lectures and two one-hour laboratory/tutorial.

Required Reading: Nil.

Assessment: Final examination, 70%; assignment and tests, 30%.

RCM1211 DATABASE SYSTEMS 1

Locations: Footscray Park,

Pre-requisites: RCM1311 Programming 1, RCM1114 Introduction to Computing and the Internet; or equivalents.


Credit Points: 12

Learning Outcomes: On successful completion of this unit, students are expected to be able to:

- Outline the benefits and functions of databases and their application;
- Describe and give examples of key Relational Database Model concepts;
- Implement a working relational database with multiple tables using a relational DBMS;
- Illustrate a database and its relationships with a relational schema;
- Describe the basics of query languages and how to manage a database using SQL;
- Explain how to use, and use both Entity Relationship and Extended Entity Relationship analysis to develop ER and EER diagrams.

Class Contact: Forty-eight (48) hours or equivalent for one semester comprising lectures and laboratory tutorials.


Assessment: In order to obtain a pass or higher in this graded unit, normally all components of assessment must be passed. Assignment Industry and community-based assignment and tests 30%
RCM1311 PROGRAMMING 1

Locations: Footscray Park,

Pre-requisites: Nil.

Descriptions: Introduction to object oriented programming. Basic constructs of a programming language; sequence, selection and iteration. Use of predefined classes from libraries. Create classes and objects. Applets.

Credit Points: 12

Learning Outcomes: On successful completion of this unit, students are expected to be able to:

- Discuss and apply fundamental aspects of computer program development;
- Describe software development activities;
- Develop algorithms using basic programming constructs;
- Create and manipulate primitive data types and structured data types;
- Apply basic object-oriented software principles in problem solving.

Class Contact: Forty-eight (48) hours or equivalent for one semester comprising lectures and laboratory tutorials.


Assessment: In order to obtain a pass or higher in this graded unit, normally all components of assessment must be passed. Assignment Practical Work and Assignment 30%

RCM1312 PROGRAMMING 2

Locations: Footscray Park,

Pre-requisites: RCM1311 Programming 1; or equivalent.

Descriptions: Structured program development through user defined classes. Array and string data types. File I/O. Inheritance, exceptions, graphical user interfaces.

Credit Points: 12

Learning Outcomes: On successful completion of this unit, students are expected to be able to:

- Use structured data types and subdivide programs into classes;
- Apply fundamental aspects of program development involving objects from multiple classes including algorithm development, top down design, testing methods;
- Write documentation;
- Use an object oriented approach to program design and implementation.

Class Contact: Forty-eight (48) hours or equivalent for one semester, comprising lectures and tutorials.

Required Reading: Nil.

Assessment: In order to obtain a pass or higher in this graded unit, normally all components of assessment must be passed.

Assignment Test and practical Work 20%

RCM1613 APPLIED STATISTICS 1

Locations: Footscray Park,

Pre-requisites: Nil.


Credit Points: 12

Learning Outcomes: On successful completion of this unit, students are expected to be able to:

- Explain data collection methods, types of variables, types of data
- Present data using graphical and numerical methods;
- Conduct elementary-level exploratory data analysis, to gain in particular, basic knowledge from real life data using basic statistical tools;
- Discuss the practice of quality control processes and charts in industries;
- Describe the principles of time series data modelling and forecasting;
- Describe the principles of experimental design and survey design;
- Explain correlation and regression analysis
- Obtain and interpret simple model fitting results using a software package.

Class Contact: Forty-eight (48) hours or equivalent for one semester comprising lectures and tutorials.


Assessment: In order to obtain a pass or higher in this graded unit, normally all components of assessment must be passed. Test Tests 40%

RCM1614 APPLIED STATISTICS 2

Locations: Footscray Park,

Pre-requisites: To be advised.


Credit Points: 12

Learning Outcomes: On successful completion of this unit, students are expected to be able to:

- Estimate and calculate probabilities of outcomes from a range of random variables using distributional properties;
- Make valid inferences from samples and explain the assumptions they have made to arrive at these inferences;
- Apply basic statistical techniques to formulate solutions to problems;
- Present solutions in a comprehensible statistical fashion.

Class Contact: Forty-eight (48) hours or equivalent for one semester comprising lectures and tutorials.


Assessment: In order to obtain a pass or higher in this graded unit, normally all components of assessment must be passed.

Test Test 40%
RCM1711 MATHEMATICAL FOUNDATIONS 1

Locations: Footscray Park,

Pre-requisites: To be advised.

Descriptions: Revision of fundamental principles: basic algebra, functions and graphs. Set theory: basic principles, operations and applications. Functions and their definitions and behaviour in terms of sets. Propositional logic and Boolean algebra. Linear algebra: vectors, matrices; applications to geometry and linear equations. Use of a computer algebra system for exploration and enhancement.

Credit Points: 12

Learning Outcomes: On successful completion of this unit, students are expected to be able to:

• Solve simple differential equations taken from a variety of applications.
• Perform indefinite and definite integration, using substitution, integration by parts and partial fractions;
• Apply simple numerical methods to equation solving and quadrature problems; and
• Solve simple differential equations taken from a variety of applications.
• Perform arithmetic on complex numbers and plot them on an Argand diagram;
• Use the binomial theorem for expansion of algebraic forms;
• Explain the concepts of differentiation and integration, and the relationship between them;
• Differentiate standard algebraic and transcendental functions, using the product, quotient and chain rules;
• Perform indefinite and definite integration, using substitution, integration by parts and partial fractions;
• Apply simple numerical methods to equation solving and quadrature problems; and
• Solve simple differential equations taken from a variety of applications.

Class Contact: Forty-eight (48) hours or equivalent for one semester comprising lectures, tutorials and computer laboratories.


Assessment: In order to obtain a pass or higher in this graded unit, normally all components of assessment must be submitted and an aggregate mark of at least 50% must be attained.

Test Mid-semester 15%

RCM1712 MATHEMATICAL FOUNDATIONS 2

Locations: Footscray Park,

Pre-requisites: To be advised.


Credit Points: 12

Learning Outcomes: On successful completion of this unit, students are expected to be able to:

• Confidently work with the algebra of sets and propositions;
• Simplify boolean expressions and solve problems requiring boolean logic;
• Perform arithmetic on vectors and matrices;
• Apply matrices to the geometric transformation of vectors;
• Solve simultaneous linear equations using matrix methods.

Class Contact: Forty-eight (48) hours or equivalent for one semester comprising lectures, tutorials and computer laboratories.


Assessment: In order to obtain a pass or higher in this graded unit, normally all components of assessment must be submitted and an aggregate mark of at least 50% must be attained.

Test Mid-semester 15%

RCM2111 DATA COMMUNICATIONS AND NETWORKS 1

Locations: Footscray Park, Hong Kong

Pre-requisites: RCM1715 Computer Systems and Architecture.


Credit Points: 12

Learning Outcomes: Students will gain confidence in analysing algorithms for speed and efficiency, using formal and informal methods, as well as an ability to solve practical and applied problems in graph (network) theory.

Class Contact: Four hours per week for one semester, comprising two hours of lectures, and two hour of laboratory/one hour tutorial.


Assessment: Final examination, 80%; assignment and tests, 20%.
**FACULTY OF HEALTH, ENGINEERING AND SCIENCE**

**RCM2112 OPERATING SYSTEMS**

**Locations:** Footscray Park, Hong Kong, Malaysia, Singapore

**Pre-requisites:** RCM1111.


**Credit Points:** 12

**Learning Outcomes:** To be advised.

**Class Contact:** Four hours per week for one semester, comprising two one hour lectures and two hours laboratory/tutorial.

**Required Reading:**

**Assessment:** Final examination, 80%; assignment(s) 20%

**RCM2113 MULTIMEDIA SYSTEMS DESIGN**

**Locations:** Footscray Park,

**Pre-requisites:** RCM1114 Introduction to Computing and the Internet, RCM1115 Computer systems and Architecture


**Credit Points:** 12

**Learning Outcomes:** To be advised.

**Class Contact:** Four hours per week for one semester, comprising one two-hour lectures and one two-hour laboratory/tutorial.

**Required Reading:** To be advised by lecturer.

**Assessment:** Final examination, 70%; assignment and tests, 30%.

**RCM2213 COMPUTER GRAPHICS**

**Locations:** Footscray Park,

**Pre-requisites:** RCM1312 Programming 2 or equivalent

**Descriptions:** This subject introduces the principles of computer graphics and the art in the representation of 2D and 3D pictures, and gives experience in using graphics package OpenGL. The topics coverage also includes popular graphics algorithms and techniques for generating 2D and 3D animations. In addition, some advanced topics, such as curves, surface and shading are discussed. Students will have considerable practice in 2D and 3D graphics programming with package OpenGL.

**Credit Points:** 12

**Learning Outcomes:** To be advised.

**Class Contact:** Two one-hour lectures and two one-hour laboratory for one semester.


**Assessment:** Laboratory, 10%; Two assignment, 30%; Final examination, 60%.

**RCM2218 DATABASE SYSTEMS 2**

**Locations:** Footscray Park, Sydney, Hong Kong, Malaysia

**Pre-requisites:** RCM1211 Database Systems 1, or equivalent.

**Descriptions:** This unit will cover the following topics:
- Data analysis and modelling using the Enhanced Entity-Relationship model and normalisation.
- Constraints beyond the EER model, and advanced data modelling issues.
- Database transactions: concept, ACID properties, specification.
- Transaction processing: commit and rollback, concurrency control, locking, scheduling, and recovery.
- Database application development using embedded SQL.
- Database security.

**Credit Points:** 12

**Learning Outcomes:** On successful completion of this unit, students are expected to be able to:
- Understand the fundamental roles of data analysis, database design and transaction specification in the development of database applications.
- Demonstrate good skills in data analysis and database design
- Demonstrate good skills in transaction analysis and transaction specification.
- Have the ability to implement database transactions effectively.

**Class Contact:** Forty eight (48) hours over one 12-week semester comprising of two (2) hours per week delivered as lectures and two (2) hours per week of tutorial/laboratory classes.


**Assessment:** Final examination, 80%; test, 20%.

**RCM2311 OBJECT ORIENTED PROGRAMMING 1**

**Locations:** Footscray Park, Sydney, Hong Kong, Malaysia

**Pre-requisites:** RCM1312 Programming 2

**Descriptions:** This subject covers the critical concepts and features that support object-oriented programming. Classes and data abstraction, graphical user interfaces, threads, streams, exceptions, system design, data structures, and collections. Mastery of these concepts provide the foundation to practice object-oriented programming in a productive way and the subsequent mastery of the finer points of object-oriented programming.

**Credit Points:** 12

**Learning Outcomes:** To be advised.

**Class Contact:** Four hours per week for one semester, comprising two hours of lectures and two hours of laboratory/tutorial.

**Required Reading:** Deitel, H.M. and Deitel, P.J. 2007, JAVA How to Program, 7th edn, Prentice Hall.

**Assessment:** Final examination, 70%; assignment, and practical work 30%.

**RCM2312 SOFTWARE ENGINEERING 1**

**Locations:** Footscray Park, Hong Kong

**Pre-requisites:** RCM1311 Programming 1; RCM1312 Programming 2.

**Descriptions:** This subject represents an introduction to traditional software development and object oriented analysis and design. It is designed to prepare students for final year computer projects. Topics to be covered include: software life cycle, software process, teams, requirements analysis and specification, structured and object oriented design, documentation of software systems. Testing, Reusability and Portability. Implementation.
Credit Points: 12

Learning Outcomes: On successful completion of this unit, students are expected to be able to:

- learn the importance and the goal of software engineering;
- understand the basic methodologies and techniques for software engineering;
- understand the basics for playing a role as a software engineer in the software development process, rather than a programmer only; and
- make the software development process more systematic and productive by applying the material introduced by this unit.

Class Contact: Four hours per week for one semester, comprising three one-hour lectures and one one-hour laboratory/tutorial.

Required Reading: To be advised by lecturer.

Assessment: Mid-semester test 10%, Final examination, 70%; assignments: 20%.

RCM2312 SOFTWARE DEVELOPMENT

Locations: Footscray Park, Sydney, Hong Kong

Pre-requisites: RCM2312 Software Engineering 1, RCM1312 Programming 2

Descriptions: The aim of this subject is to develop an appreciation of the process whereby software is developed in a production environment students will build upon and reinforce their knowledge of software engineering principles by working in a team on a real-life production project.

Credit Points: 12

Learning Outcomes: To be advised.

Class Contact: Four hours per week for one semester, comprising two one-hour lectures and two one-hour laboratory/tutorial.


Assessment: Final examination, 20% Labs, 30% Assignments, 25% Mid-Semester Test, 25% Final Test. In order to pass, students must obtain at least 25% of labs and assignments, and 25% of tests in this subject.

RCM2315 ADVANCED PROGRAMMING

Locations: Footscray Park, Hong Kong, Malaysia, Singapore

Pre-requisites: RCM1312 Programming 2

Descriptions: Fundamental data types; Class definition; Polymorphism; Operator overloading; Characters and strings; Input & Output; Exception handling; Data Structures and collections; Features and facilities found in this programming language.

Credit Points: 12

Learning Outcomes: To be advised.

Class Contact: Four hours per week for one semester, comprising two one-hour lectures and two one-hour laboratory/tutorial.

Required Reading: To be advised by lecturer.

Assessment: Final examination, 70%; assignment and tests: 30%.

RCM2316 NETWORK OPERATING SYSTEM ADMINISTRATION

Locations: Footscray Park,

Pre-requisites: RCM2111 Data Communications and Networks 1.


Credit Points: 12

Learning Outcomes: To be advised.

Class Contact: Four hours per week for one semester comprising of two one-hour lectures and one one-hour laboratory and one hour tutorial.


Assessment: Final examination, 80%; laboratory work 20%.

RCM2321 MATHEMATICS OF CONTINUOUS PROCESSES B

Locations: Footscray Park,

Pre-requisites: RCM2712 Mathematics of Continuous Processes A.


Credit Points: 12

Learning Outcomes: To be advised.

Class Contact: 2 x one hour lecture and 2 x one hour tutorial for one semester.

Required Reading: Nil.

Assessment: 20% mid-semester test; 80% end of semester examination.

RCM2511 IMAGE PROCESSING 1

Locations: Footscray Park, Sydney, Malaysia

Pre-requisites: RCM1114 Introduction to Computing and the Internet, and one of RCM1711 or RCM1712.


Credit Points: 12

Learning Outcomes: To be advised.

Class Contact: Two hours of lectures, one hour of practical work, one hour tutorial per week.

Required Reading: None.

Assessment: Final examination 75%, laboratory assessment 25%;
RCM2611 LINEAR STATISTICAL MODELS

Locations: Footscray Park.
Credit Points: 12
Learning Outcomes: To be advised.
Class Contact: Four hours per week for one semester, comprising two one-hour lectures, one one-hour tutorial and one one-hour laboratory.
Assessment: Final examination, 70%; assignment: 30%

RCM2612 FORECASTING

Locations: Footscray Park, Off-shore, Sydney, Hong Kong, Malaysia
Pre-requisites: RCM1614
Credit Points: 12
Learning Outcomes: To be advised.
Class Contact: Four hours per week for one semester, comprising two one-hour lectures and two one-hour laboratory.
Required Reading: Nil.
Assessment: Project, 40%; Examination, 60%.

RCM2614 STATISTICAL DATAMINING

Locations: Footscray Park, Hong Kong, Malaysia, Singapore
Pre-requisites: RCM1614 - APPLIED STATISTICS 2
Descriptions: Statistical data mining methods, cluster analysis, discriminant analysis, issues in sampling and estimation, using the bootstrap, non-parametric methods.
Credit Points: 12
Learning Outcomes: To be advised.
Class Contact: Four hours per week for one semester, comprising two one-hour lectures, one one-hour tutorial and one one-hour practical.
Required Reading: Giudici, P. 2004 Applied Data Mining, Wiley.
Assessment: Final examination, 60%; assignments and tests, 40%.

RCM2712 MATHEMATICS OF CONTINUOUS PROCESSES A

Locations: Footscray Park.
Pre-requisites: RCM1712 - MATHEMATICAL FOUNDATIONS 2
Credit Points: 12
Learning Outcomes: Lecture and tutorial work as well as small group project work.
Class Contact: 2 x 1hr lecture and 2 x 1hr tutorial for one semester.
Required Reading: Nil.
Assessment: 15% mid-semester test (1 hour) 15% project work 70% end of semester examination (3 hours)

RCM2713 MODELLING FOR DECISION MAKING

Locations: Footscray Park, Hong Kong, Malaysia, Singapore
Pre-requisites: RCM1712
Credit Points: 12
Learning Outcomes: To be advised.
Class Contact: Four hours per week for one semester.
Assessment: Final examination, 80%; assignments, 20%.

RCM2810 ADVANCED INTERNET PROGRAMMING

Locations: Footscray Park, Sydney (Alpha Beta College), Hong Kong, Malaysia.
Pre-requisites: RCM1114 - INTRODUCTION TO COMPUTING AND THE INTERNET
Descriptions: XHTML and JavaScript: interaction between a web-page and a user; input validation and submission of a form; response to submission of a form; connecting an OOM to a GUI. The bridge between XHTML/JavaScript and an embedded object: applets and scriptlets as examples of embedded objects; how to use XHTML to initialize parameters of an an applet, and to use JavaScript to control the parameters at runtime; how to adapt an applet to read initial values of parameters from an XHTML page, and to read parameter values at run-time from an XHTML/JavaScript page; DHTML: CSS style-sheets, positioning elements, layering a page, interaction between the user and the web-page; Server-side topics: communication through sockets, creating a simple browser and a simple HTTP server, PHP, MySQL; Emerging Internet technologies such as SOAP for accessing objects, and Wireless ML for WAP-enabled devices.
Credit Points: 12
Learning Outcomes: To be advised.
Class Contact: Four hours per week for one semester, comprising one two-hour lecture and one two-hour laboratory/tutorial.
Assessment: Laboratory work, 12%; mid-semester practical examination (3 hours duration), 30%; end-of-semester practical examination (3 hours duration), 58%. In order to pass, students must obtain at least 50% of the total marks given in this subject.

RCM2911 LINEAR OPTIMISATION MODELLING

Locations: Footscray Park,

Pre-requisites: Nil

Descriptions: Introduction to linear programming; Mathematical models; Graphical solution; Maximisation and minimisation problems; Spreadsheet models. Sensitivity analysis for LP, Applications of LP. Transportation problem. Assignment & Trans-shipment Simplex method, Hungarian method. Pure and mixed integer linear programming; Knapsack problems.

Credit Points: 12

Learning Outcomes: To be advised.

Class Contact: Four hours per week; two hour lecture and two hour tutorial and/or laboratory.


Assessment: Participation in tutorials, 5%; test 15%; assignment, 10%; final examination, 70% three hours; to obtain a grade of pass or better, a student must obtain 40% or more in the final examination.

RCM2912 PROJECT SCHEDULING

Locations: Footscray Park, Sydney, Hong Kong, Malaysia

Pre-requisites: Nil


Credit Points: 12

Learning Outcomes: To be advised.

Class Contact: Four hours per week for one semester comprising two hours lectures and two hour laboratory/tutorial.

Required Reading: Lecture notes provided by lecturer.

Assessment: Two Assignments 30%, Final Examination 70%.

RCM2914 PROJECT AND INVENTORY ANALYSIS

Locations: Footscray Park,

Pre-requisites: Nil

Descriptions: Project Life cycle: phases and costing of life cycles; Project Evaluation: time value of money, break-even analysis, payback, Return on Investment; Inventory: cost components, models for Economic Order Quantity, Reorder Points, Safety Stock, Quantity Discounts.

Credit Points: 12

Learning Outcomes: To be able to understand the life span of a business project from conception to disposal, what the elements of costs and benefits of a project are, and how alternative project proposals are evaluated. This subject also teaches various inventory issues, including the Economic Order Quantity models of Inventory Control.

Class Contact: Four hours per week for one semester, comprising two one-hour lectures and two one-hour laboratory/tutorial.


Assessment: Class Test 1 hour 20% P2, I2, W2, A2One Group Assignment, 2 or 3-persons 20% P2, I2, O2, W2, C2, D2Final Examination 3 hours 60% P2, I2, W2, A2

RCM2915 STOCHASTIC AND COMBINATORIAL OPTIMISATION

Locations: Footscray Park, Hong Kong, Malaysia, Singapore

Pre-requisites: RCM1613 - APPLIED STATISTICS 1OR equivalent.

Descriptions: Decision Analysis: Decision Making without and with Probabilities; Decision Trees, EVPI and EVSI. Multicriteria Decision Making: Scoring Model, Analytical Hierarchy Process; Spreadsheet Analysis. Selected Combinatorial Optimisation Models: Network Models - spanning tree, shortest path, and maximum flow problems; Set Covering Problem; Cutting Stock Problem; Bin Packing Problem. Queuing Theory: Basic components of a queuing model, arrival and service time distributions; operating characteristics of a queuing system; multiple server models; no waiting time and finite calling population; Economic Analysis; Spreadsheet Analysis.

Credit Points: 12

Learning Outcomes: To be advised.

Class Contact: Four hours per week for one semester; two hours lecture and two hour tutorial/laboratory.


Assessment: Participation in Tutorials, 5%; Class Test, 15%; Assignment, 10% Final examination, 70%. To obtain a grade of pass or better a student must obtain 40% or more in the final examination.

RCM2917 LOGISTICS TECHNOLOGY AND SIMULATION

Locations: Footscray Park,

Pre-requisites: RCM1114 - INTRODUCTION TO COMPUTING AND THE INTERNET OR equivalent

Descriptions: Scope of Logistics; Logistics technologies e.g. Bar Code, RFID, EDI; Simulation modelling concepts: Application of simulation model (SIMAN, ARENA) for a logistic system.

Credit Points: 12

Learning Outcomes: After completing the subject, a student is expected to be familiar with the technologies used to identify and locate the materials, and exchanging information relevant to logistics industry. They should be able to structure a logistics problem in a form that can be simulated; Develop models and their solutions using a simulation language.

Class Contact: Four hours per week for one semester, comprising two one-hour lectures and two one-hour laboratory/tutorial.


Assessment: Class Test 1 hour 15% P2, I2, W2, A2One Individual Assignment 25% P2, I2, W2, A3, D2Final Examination 3 hours 60% P2, I2, W2, A2
**RCM2930 3D WEB TECHNOLOGIES**

Locations: Footscray Park, Sydney, Hong Kong, Malaysia.

Pre-requisites: RCM1312 - PROGRAMMING 2

Descriptions: VRML/Java3D programming. Structure of a VR Object; Basic structures and adjustment of predefined simple and complex scenes. Adding processing capabilities to VR models by scripting languages. Adding audio-visual effects (light, sound, image texture mapping, audio and video), higher level tools for creating 3D virtual worlds and other approaches to 3D web content; scene graphs. Creating and navigating the virtual world. Creating interactive 3D graphic models and animations by Java 3D.

Credit Points: 12

Learning Outcomes: To be advised.

Class Contact: Four hours per week comprising of lectures and two hour of tutorial and computer laboratory.

Required Reading: Lectures notes provided by the lecturer.

Assessment: Normally Two Assignments, 30%; final examination, 70%.

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**RCM3001 PROJECT 1**

Locations: Footscray Park, Sydney, Hong Kong, Malaysia

Pre-requisites: 10 Electives

Descriptions: This subject is based and involves projects with industry sponsors selected by the University. Students work in groups under the supervision of an Academic Staff member. For computing projects students are required to submit a specification document, a final project report and demonstrate the software. For non-computing projects students are required to submit a project specification and a final project report. In addition, all groups present progress and final oral presentations to other students, staff and industry partners.

Credit Points: 12

Learning Outcomes: To be advised.

Class Contact: four hours per week

Required Reading: Nil.

Assessment: Based on performance in the projects oral presentations and quality of final reports.

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**RCM3002 PROJECT 2**

Locations: Footscray Park, Sydney, Hong Kong, Malaysia

Pre-requisites: ACE1145 or Year 12 English or competence in English, Must have completed year 2.

Descriptions: Appropriate to the project involved, the student will be required to produce a number of documents such as test plan, design project report, user manual, e-poster and CD-ROM. The student will be continually supervised under the guidance of the subject co-ordinator and their project supervisors via weekly meetings at various stages of the project. The student’s ability as a competent communicator in industry settings will be further developed through workshop activities. The writing of a group project report, writing professional applications, preparing for and role playing interviews and developing oral presentation skills will be included in the workshops.

Credit Points: 12

Learning Outcomes: To be advised.

Class Contact: 1x two hr project meetings with subject co-ordinator and project supervisor; 1x two hr workshop.


Assessment: Demo Presentations, 10%; User Acceptance Test, 20%; Attendance of Meetings and Online Logbook, 5%; Documentation, User Manual, 20%; Final Presentation & e-Poster, 20%; Written Employment Application, 15%; Interviews, 10%. All items of assessment must be completed in order for a final result to be obtained in this subject.

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**RCM3021 LOGISTICS ANALYSIS AND SOLUTIONS**


Pre-requisites: BEO4123 Global Logistics and BEO3203 Supply and Value Networks.

Descriptions: The unit of study aims to familiarise students with the process of resolving logistics related business problems through the process of conducting logistics audits and relating them to a number of problem areas. Topics include: Problem Based Learning techniques; logistics audit methodologies; problem identification; problem resolution; report preparation directed towards the analytical aspects of logistics.

Credit Points: 12

Learning Outcomes: Structure a specific problem and analyse the current industry environment in which the problem exists. Use audit report methods as a basis to provide management with options and viable solutions for a range of issues such as: Transport; Storage; Material Handling; Inventory; Procurement. Apply Problem Based Learning techniques as the learning medium.

Class Contact: Equivalent to three hours per week. Normally to be delivered as two hours of lectures and one hour of tutorials, workshops or modules or a delivery mode as approved by the Faculty of Business and Law. Unit of study equal to 12 credit points.


Assessment: Minor assignment (1000 words), 20%; Major assignment (3000 words), 30%; Case studies (500 words), 5 x 10%.

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**RCM3111 DATA COMMUNICATIONS & NETWORKS 2**

Locations: Footscray Park, Pre-requisite(s) RCM2111 Data Communications & Networks 1

Pre-requisites: To be advised.


Credit Points: 12

Learning Outcomes: To be advised.

Class Contact: Four hours contact per week for one semester comprising two one hour lectures and two one-hour laboratory/tutorial.

Required Reading: To be advised by lecturer.

Assessment: Final examination, 70%, assignments, 30%.

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**RCM3112 USER INTERFACE DESIGN**

Locations: Footscray Park, Sydney, Hong Kong, Malaysia

Pre-requisites: RCM1114 - INTRODUCTION TO COMPUTING AND THE INTERNET

Credit Points: 12

Learning Outcomes: To be advised.

Class Contact: Four hours per week for one semester, comprising two one-hour lectures and one two-hour laboratory/tutorial.

Required Reading: To be advised.

Assessment: Final examination, 70%; assignment and tests, 30%.

RCM3111 OBJECT ORIENTED PROGRAMMING 2

Locations: Footscray Park, Hong Kong

Pre-requisites: RCM3112 Programming 2; RCM2311 Object Oriented Programming 1.

Descriptions: The unit explores advanced Java object-oriented programming techniques and their distributed characteristics in the Internet environment. Topics covered include JavaBeans, Network Programming, JDB, Servlets, Java Server Faces (JSF), Mobile Technologies using Java.

Credit Points: 12

Learning Outcomes: On successful completion of this unit, students are expected to be able to: Broaden their knowledge of the Java platform as well learning new topics: 2.Java's I/O system, JAR - Java Archives, Java security, Java Containers, JavaBeans, Network programming: Client Server programming, Socket programming, Server-side programming: JSP, JDBC, Servlets, Wireless programming Required Reading To be advised by lecturer.

Class Contact: To be advised.


Assessment: Mid-semester examination 10%, assignments 20%, Final examination, 70%

RCM3312 INTELLIGENT SYSTEMS

Locations: Footscray Park, Sydney, Hong Kong, Malaysia

Pre-requisites: RCM3112 Programming 2 and RCM1114 Introduction to Computing and the Internet

Descriptions: Introduction to intelligent systems and artificial intelligence, including a study of knowledge representation and problem solving strategies of rule-based expert systems, fuzzy logic, artificial neural networks and genetic algorithms. Practical work includes JESS expert system shell.

Credit Points: 12

Learning Outcomes: To be advised.

Class Contact: Four hours per week for one semester, comprising two one-hour lectures and one two-hour laboratory/tutorial.


Assessment: Final examination, 80%; assignment(s), 20%.

RCM3313 SOFTWARE ENGINEERING 2

Locations: To be advised.

Pre-requisites: RCM2311 - OBJECT ORIENTED PROGRAMMING 1

Descriptions: Topics include inspection and formal review, good programming practice, software testing, software estimation, project planning, software process improvement and capability maturity models.

Credit Points: 12

Learning Outcomes: To be advised.
Class Contact: Four hours per week for one semester, comprising two one-hour lectures and two one-hour laboratory/tutorial.

Required Reading: To be advised.

Assessment: Final examination, 80%; assignment 20%. In order to pass, students must obtain at least 50% of the total marks given in this subject, including at least 40% of the examination mark and at least 40% of the internal marks.

RCM3314 OBJECT ORIENTED ANALYSIS AND DESIGN

Locations: Footscray Park, Sydney, Hong Kong, Malaysia

Pre-requisites: RCM2311 Object Oriented Programming 1.

Descriptions: Review of object oriented design approaches; the Unified Modeling Language (UML); introduction to Rational Rose, the Unified Method; and Agile Modeling approach. Design of domain layer; design of storage layer for the use of persistent objects; user interface design considerations; applying the patterns approach to analysis and design.

Credit Points: 12

Learning Outcomes: To be advised.

Class Contact: Four hours per week for one semester comprising of two one-hour laboratory and two one-hour tutorial.

Required Reading: Larman, C., 2005, Applying UML and Patterns Pearson Education.

Assessment: Final examination, 70%; Assignment and test, 30%.

RCM3316 ADVANCED MATHEMATICAL TECHNIQUES

Locations: Footscray Park,

Pre-requisites: RCM2321 - MATHEMATICS OF CONTINUOUS PROCESSES B

Descriptions: A selection of one or more of the following topics:

Asymptotic and perturbation techniques, Taylor’s Theorem and 1’Hospital’s Rule, Order Symbols, Asymptotic Expansions, Asymptotic series versus convergent series, introduction to perturbation theory, Taylor’s method, perturbation and Asymptotic of Algebraic and Transcendental Equations, application to solution of differential equations, regular versus singular perturbation, application to expansion of integrals, Gamma function, transforms, integration by parts, Laplace method, method of stationary phase, method of steepest descent, developing Maple code to solve applicable problems.

Advanced techniques for differential equations: methods for non-constant coefficient ordinary differential equations, analytic techniques to solve linear partial differential equations, heat equations, wave equation, Black-Schole option pricing formula, Navier Stokes equation including viscous and invidid fluid flow. Green’s functions and reformation to integral form.

Computational techniques to include finite element method, Crank-Nicholson, elementary methods for integral equations and singular quadrature.

Advanced computational techniques: Integration and quadrature including Newton-Cotes, weighted Newton-Cotes, adaptive schemes, Gaussian quadrature, Peano theorem and generation of error bounds for a variety of measures, application to Taylor theorem, integral transforms and integral equations of the first and second kind, multi-dimensional quadrature.

Credit Points: 12

Learning Outcomes: To be advised.

Class Contact: 2 x 1hr lecture, 1x1hr tutorial, 1x1hrs Laboratory for one semester.

Required Reading: Nil

Assessment: 15% Lab work, 15% mid-semester test (90 minutes), 70% end of semester examination (3 hours).

RCM3413 FINANCIAL MODELLING

Locations: To be advised.

Pre-requisites: To be advised.

Descriptions: To be advised.

Credit Points: 12

Learning Outcomes: To be advised.

Class Contact: To be advised.

Required Reading: To be advised.

Assessment: To be advised.

RCM3511 IMAGE PROCESSING 2

Locations: Footscray Park,

Pre-requisites: RCM2511 Image Processing, RCM1312 Programming 2


Credit Points: 12

Learning Outcomes: To be advised.

Class Contact: Four hours per week for one semester, comprising two one-hour lectures and two one-hour laboratory/tutorial.


Assessment: Final examination, 70%; assignment and tests, 30%.

RCM3611 REGRESSION ANALYSIS

Locations: Footscray Park,

Pre-requisites: RCM2611 - LINEAR STATISTICAL MODELS

Descriptions: Review of linear model theory. The signs of, and solution to, common problems with the assumptions necessary for inference in the least squares regression method. Using Generalised Linear Models to overcome a number of these problems. Logistic regression and log linear models. Non-linear regression methods.

Required Reading: Myers, R.H. ‘Classical and Modern Regression with Applications’ 2nd Ed. 1990, Duxbury.

Credit Points: 12

Learning Outcomes: To be advised.

Class Contact: To be advised.

Required Reading: To be advised.

Assessment: Final Examination 60% Assignments 40%.

RCM3613 TIME SERIES ANALYSIS

Locations: Footscray Park, Hong Kong, Malaysia, Singapore

Pre-requisites: RCM2612 Forecasting or equivalent.


Credit Points: 12

Learning Outcomes: To be advised.

Class Contact: Four hours per week comprising two hours lecture and two hour laboratory.

Required Reading: To be advised by lecturer

Assessment: Final examination, 80%; project, 20%.

RCM3615 MULTIVARIATE STATISTICS

Locations: Footscray Park,

Pre-requisites: RCM2611 Linear Statistical Models, RCM1713 Discrete Mathematics.

Descriptions: Revision and extension of work previously covered on matrix algebra. Brief discussion of multivariate distributions with particular reference to the multivariate normal distribution and discussion of multivariate statistical tests. A selection of topics from, discriminant analysis, principal components, factor analysis, regression analysis.

Credit Points: 12

Learning Outcomes: To be advised.

Class Contact: Four hours per week for one semester, comprising two hours of lectures and two hour laboratory/tutorial.


Assessment: Final examination, 80%; Test, 20%.

RCM3617 QUALITY IMPROVEMENT AND EXPERIMENTAL DESIGN

Locations: Footscray Park,


Credit Points: 12

Learning Outcomes: To be advised.

Class Contact: Four hour mix of lectures, tutorials, practice and laboratory classes.

Required Reading: To be advised by the lecturer.

Assessment: Final examination, 80%; Mid-semester test, 20%.

RCM3711 COMPUTATIONAL METHODS

Locations: Footscray Park,

Pre-requisites: RCM2712 Mathematics of Continuous Processes A.

Descriptions: This subject is designed for students interested in applying knowledge of programming techniques to solving applied computational problems. Topics include approximation and interpolation, optimization and root finding, quadrature, spectral decomposition and methods for differential equations. A variety of practical applications will be considered, set in a high level programming environment.

Credit Points: 12

Learning Outcomes: To be advised.

Class Contact: Four hours per week for one semester, comprising two one-hour lectures and two one-hour laboratory/tutorial.

Required Reading: Nil

Assessment: Final examination, 80%; assignment and tests, 20%.

RCM3720 CRYPTOGRAPHY, COMPUTER AND NETWORK SECURITY

Locations: Footscray Park, Sydney, Malaysia

Pre-requisites: RCM1711 Mathematical Foundations 1 and RCM1712 Mathematical Foundations 2 or equivalent.


Credit Points: 12

Learning Outcomes: To be advised.

Class Contact: Four hours per week: two hours lecture, and two hour tutorial or laboratory.

Required Reading: To be advised by the lecturer.

Assessment: Final examination, 80%; assignment and tests, 20%.

RCM3820 INTERNET COMPUTING USING XML

Locations: Footscray Park, Sydney (Alpha Beta College), Hong Kong, Malaysia.

Pre-requisites: RCM1111 - INTRODUCTION TO COMPUTING AND THE INTERNET

Descriptions: Introduction to XML: definition, benefits, etc.; XML tools; XML namespaces; Document Type Definitions; XML Schema; Extensible Stylesheet Language; XML Forms; XSL Formatting Objects; Resource Description Framework and Dublin Core.

Credit Points: 12

Learning Outcomes: To be advised.

Class Contact: Four hours/week: two hours of lectures and two hours of computer laboratory.


Assessment: Final examination, 70%; 2 assignments, 30%.

In order to pass, students must obtain at least 50% of the total marks given in this subject.

RCM3911 SIMULATION

Locations: Footscray Park, Hong Kong

Pre-requisites: Pass in eight electives (advisory). Students should have successfully completed second year.

Descriptions: On completion of the subject, students should be able to: understand the philosophy and concepts of simulation; have a good knowledge and understanding of a modern simulation language including principles of modelling; design, justify, and implement computer-based models of the operation of manufacturing and business systems.

Credit Points: 12
Learning Outcomes: To be advised.

Class Contact: Four hours per week for one semester, comprising two one-hour lectures and two one-hour laboratory/tutorial.

Required Reading: SCM3911 Lecture Notes.

Assessment: Final examination, 70%; assignment and tests, 30%.

RCM3940 COMPUTATIONAL RISK MODELLING

Locations: Footscray Park,

Pre-requisites: RCM1311 - PROGRAMMING 1


Credit Points: 12

Learning Outcomes: To be advised.

Class Contact: Two hrs of lectures and two hr tutorial/laboratory per week for one semester.


Assessment: Assignment, 20%; final examination, 80%.

RCM3950 INTERNET DATA MANAGEMENT

Locations: Footscray Park, Sydney (Alpha Beta College), Hong Kong, Malaysia.

Pre-requisites: RCM2313

Descriptions: Introduction to Class; Introduction to ASP.NET; Introduction to Visual Studio .NET; Using Server Controls; Using ASP.NET Rich Controls; Using Visual Basic. .NET Within an ASP.NET Page; Managing Data Sources; Building Data-Driven ASP.NET Applications; Building Data-Driven Web Applications; Configuring an ASP.NET Application; Troubleshooting and Deploying an ASP.NET Application.

Credit Points: 12

Learning Outcomes: To be advised.

Class Contact: Four hours per week for one semester, comprising one two-hour lecture and two one-hour laboratory/tutorial.

Required Reading: Introduction to ASP.NET, Kathleen Kalata, © 2002 Course Technology, 0-619-06321-1.

Assessment: Laboratory, 15%; Assignments,35%; mid-Semester Test (1 hour duration), 25%; final test (1 hour duration). In order to pass, students must obtain at least 25% of Labs and Assignment, and 25% of Tests in this subject.

RCM3960 INTERNET SECURITY

Locations: Footscray Park,

Pre-requisites: RCM1711 Mathematical Foundations 1, and RCM1712 Mathematical Foundations 2 or RCM1713 Discrete Mathematics, or equivalents.


Credit Points: 12

Learning Outcomes: On successful completion of this unit, students are expected to be able to:

- Recognise and describe basic security vulnerabilities, in terms of human, software, hardware and environmental factors;
- Devise processes to ensure greater security;
- Differentiate between different types of security attacks;
- Harden a computer system or network, including network components, wireless peripherals and desktop machines.

Class Contact: Forty-eight (48) hours or equivalent for one semester comprising lectures and computer laboratories.


Assessment: In order to obtain a pass or higher in this graded unit, normally all components of assessment must be submitted and an aggregate mark of at least 50% must be attained. Test Mid-semester 15%.

RCM3970 COMPUTER GRAPHICS FOR GAME PROGRAMMING

Locations: Footscray Park, Sydney (Alpha Beta College), Hong Kong, Malaysia, China.

Pre-requisites: RCM1713 - DISCRETE MATHEMATICS

Descriptions: The graphics pipeline and graphics performance: texture mapping; description of surface and curve; advanced topics on hidden surface removal; using and manipulating scene graphs; design of interactive applications; collision detection, geometric level of detail; special effects such as shadows, billboarding and motion blur; and hardware procedural shading.

Credit Points: 12

Learning Outcomes: To be advised.

Class Contact: Four hours per week for one semester, comprising one two-hour lecture and two one-hour tutorial and computer laboratory.

Required Reading: Lecture notes provided by lecturer.

Assessment: Normally two assignments, 30%; final examination, 70%.

RCM5404 FINANCIAL DECISION SUPPORT SYSTEMS

Locations: Footscray Park,

Pre-requisites: To be advised.

Descriptions: This subject focuses on modelling the financial flows associated with investment both in commercial projects and in financial assets. Topics may include: the riskless investment: compound interest, present-value and future-value of a sequence of dated cash-flows, measures of rate-of-return; the single-period risky investment, the Markowitz mean-variance comparison of investments; reduction of risk through portfolio optimisation; the capital asset pricing model; extension to multi-period risky investments; financial instruments underlying sources of finance, bonds, shares, options, futures, currencies; Black/Scholes pricing of options; interest rate risk (duration and convexity); software-packages for financial modelling.

Credit Points: 12
Learning Outcomes: To be advised.

Class Contact: Three hours per week comprising two hours of lectures and one one-hour tutorial.


Assessment: Will be based on a combination of examination, assignments, tests and presentations according to a formula to be provided during the first week of classes.

RCM5601 FORECASTING

Locations: Footscray Park, Sydney, Hong Kong, Malaysia

Pre-requisites: RCM1614 - APPLIED STATISTICS 2OR equivalent.


Credit Points: 12

Learning Outcomes: To be advised.

Class Contact: Three hours per week for one semester, comprising two hours of lectures and one one-hour laboratory.

Required Reading: Nil.

Assessment: Project, 40%; Examination, 60%.

RCM5602 QUALITY MANAGEMENT AND STATISTICS

Locations: Footscray Park,

Pre-requisites: Two undergraduate statistics subjects.


Credit Points: 12

Learning Outcomes: To be advised.

Class Contact: Three hour mix of lectures, tutorials, practice and laboratory classes.

Required Reading: To be advised by lecturer.

Assessment: Final examination, 80%; Mid-semester tests, 20%.

RCM5800 OBJECT ORIENTED PROGRAMMING GD1

Locations: Footscray Park, Hong Kong

Pre-requisites: Nil.

Descriptions: Programming language; basic object oriented concepts; programming, algorithm development and elementary data structures objects and classes.

Credit Points: 12

Learning Outcomes: To be advised.

Class Contact: Three hours per week for one semester comprising two hours of lectures and one one-hour practical.

Required Reading: To be advised by lecturer.

Assessment: Will be based on a combination of examination, assignments, tests and presentations according to a formula to be provided during the first week of classes.

RCM5802 INFORMATION SYSTEMS

Locations: Footscray Park, Hong Kong

Pre-requisites: Nil.

Descriptions: Database concepts and design methodology; hierarchical, network and relational models; relational approach and relational calculus; object-oriented approach to database design; conceptual models and query interfaces; database management and administration functions; shared access control, security, recovery and query interfaces; study and use of fourth generation languages for query, update and report generation.

Credit Points: 12

Learning Outcomes: To be advised.

Class Contact: Three hours per week for one semester comprising two hours of lectures and one one-hour practical.

Required Reading: To be advised by lecturer.

Assessment: Will be based on a combination of examination, assignments, tests and presentations according to a formula to be provided during the first week of classes.

RCM5803 DATA STRUCTURES AND PROGRAMMING

Locations: Footscray Park,

Pre-requisites: RCM5800 Object Oriented Programming GD1

Descriptions: Program development and testing using Software Engineering principles; object oriented programming languages; organisation and manipulation of data; the software environment; object oriented design and analysis. Abstract data types.

Credit Points: 12

Learning Outcomes: To be advised.

Class Contact: Three hours per week for one semester comprising one one-hour lecture and one two-hour practical.

Required Reading: To be advised by lecturer.

Assessment: Will be based on a combination of examination, assignments, tests and presentations according to a formula to be provided during the first week of classes.

RCM5805 COMMUNICATION AND NETWORKS

Locations: Footscray Park, Hong Kong

Pre-requisites: Nil.


Credit Points: 12

Learning Outcomes: To be advised.

Class Contact: Three hours per week for one semester comprising two hours of lectures and one one-hour laboratory work.
Required Reading: To be advised by lecturer.
Assessment: Will be based on a combination of examination, assignments, tests and presentations according to a formula to be provided during the first week of classes.

RCMS807 ADVANCED INFORMATION SYSTEMS

Locations: Footscray Park, Hong Kong.
Pre-requisites: RCMS802 Information Systems or equivalent.

Descriptions: Data analysis and modelling using the Enhanced Entity-Relationship model and normalisation. Constraints beyond the EER model, and advanced data modeling issues. Database transactions: concept, ACID properties, specification. Transaction processing: commit and rollback, concurrency control, locking, scheduling, and recovery. Database application development using embedded SQL.

Credit Points: 12
Learning Outcomes: To be advised.
Class Contact: Two hour lecture and one hour laboratory per week.
Required Reading: To be advised by lecturer.
Assessment: Final examination, 80%; test, 20%.

RCMS810 SOFTWARE DEVELOPMENT

Locations: Footscray Park,
Pre-requisites: RCMS800 - OBJECT ORIENTED PROGRAMMING GD1

Descriptions:
- Introduction to VB
- .NET
- Microsoft
- .NET Framework
- Introduction to Visual Studio .NET Integrated Development Environment
- VB control structures: Selection and Iteration
- Array, Sub Procedures and Function Procedures
- Graphical User Interface Design and Programming
- Using VB .NET Supplied Class
- Writing Class Definitions and
- Object Oriented Programming in VB .NET
- Introduction to DBMS, SQL and ASP .NET
- Exception Handling

Credit Points: 12
Learning Outcomes: On the completion of the subject, students should be able to:
- distinguish between the design process and the implementation process
- appreciate the different demands for implementation of software when using different software development paradigms
- work in a team environment and understand the importance of personnel management
- appreciate the complexity of deliverable software products and
- develop an object-oriented three-tier real-world application.

Class Contact: Three hours per week for one semester, comprising two-hour lecture and one-hour laboratory/tutorial.

RCMS811 OPERATING SYSTEMS

Locations: Footscray Park, Hong Kong, Malaysia, Singapore
Pre-requisites: RCMS801 - INTRODUCTION TO COMPUTER SCIENCE OR equivalent.


Credit Points: 12
Learning Outcomes: On successful completion of this unit, students are expected to be able to understand the tasks accomplished by a computer’s operating system as the interface between user and computer and also as the resource manager for the computer system. Students gain some practical experience using operating systems.

Class Contact: Three hours per week for one semester, comprising two one hour lectures and one hour laboratory/tutorial.
Assessment: 70% final examination 30% test and assignment

RCMS813 ARTIFICIAL INTELLIGENCE

Locations: Footscray Park,
Pre-requisites: Nil.

Descriptions: LISP; knowledge representation - semantic nets, problem solving, search, frames; knowledge based systems - rule-based systems; logic programming; developing an expert system.

Credit Points: 12
Learning Outcomes: To be advised.
Class Contact: Three hours per week for one semester comprising two hours of lectures and one one-hour practical.
Required Reading: To be advised by lecturer.
Assessment: Will be based on a combination of examination, assignments, tests and presentations according to a formula to be provided during the first week of classes.

RCMS814 COMPUTER GRAPHICS

Locations: Footscray Park, Hong Kong, Malaysia, Singapore
Pre-requisites: RCMS800 - OBJECT ORIENTED PROGRAMMING GD1OR equivalent.

Descriptions: This subject introduces the principles of computer graphics and the art in the representation of 2D and 3D pictures, and gives experience in using graphics package OpenGL. The topics coverage also includes popular graphics algorithms and techniques for generating 2D and 3D animations. In addition, some advanced topics, such as curves, surface and shading are discussed. Students will have considerable practice in 2D and 3D graphics programming with package OpenGL.

Credit Points: 12
Learning Outcomes: To be advised.
Class Contact: Two one-hour lectures and two one-hour laboratory for one semester
RMCS21 INTRODUCTION TO MULTIMEDIA SYSTEMS
Locations: Footscray Park,
Pre-requisites: Nil.
Descriptions: History and fundamentals of multimedia systems. Hypertext, CD-ROM
based interactive multimedia. Components of a multimedia system: voice, graphics,
animation, images, audio, and full-motion video. Standards for image compression.
Multimedia applications: educational systems, virtual environments, multimedia
conferencing, knowledge-based multimedia systems.
Credit Points: 12
Learning Outcomes: To be advised.
Class Contact: Three hours per week for one semester, comprising one-one hour
lectures and one one-hour laboratory/tutorial.
Required Reading: To be advised by the lecturer.
Assessment: Final examination, 80%; assignments, 20%.

RMCS24 OBJECT ORIENTED PROGRAMMING GD2
Locations: Footscray Park, Hong Kong
Pre-requisites: RMCS802 Object Oriented Programming GD1
Descriptions: This subject provides practice to object oriented programming and
methodology using advanced features and the application programming interface
of the Java programming language. A deeper discussion of classes and objects,
encapsulation, polymorphism, inheritance, relationships among classes of objects and
programming with related classes along with exception handling, multithreading, file
I/O and building GUI components.
Credit Points: 12
Learning Outcomes: To be advised.
Class Contact: Three hours per week for one semester comprising two hours of
lectures and one one-hour laboratory.
Required Reading: To be advised by lecturer.
Assessment: Final examination, 75%; assignment and laboratory, 25%.

RMCS25 WEB PROGRAMMING
Locations: Footscray Park, Hong Kong, Malaysia, Singapore
Pre-requisites: Competency in Java.
Descriptions: HTML (and XHTML). JavaScript. Object-oriented programming in
JavaScript. Communication between HTML/JavaScript and an applet. Creating an
applet for communication with HTML/JavaScript. Cascading style sheets (CSS).
Using layered pages to achieve dynamic effects (DHTML). Communications: Java
applications for internet communication; creating simple browsers and servers.
Server-side programming: response to a client-submitted form; CGI; PHP; XML; XSL;
RMI. Linking mobile telephones to the internet via WAP/WML technology.
Credit Points: 12
Learning Outcomes: To be advised.
Class Contact: Two hour lectures and 1 hour laboratory per week
Required Reading: Deitel, Deitel and Nieto, 2001 or later, Internet and World Wide
Web: How to Program, Prentice Hall.
Assessment: Final Examination 58%, mid-semester practical test 30%, laboratory
12%.

RMCS27 INTELLIGENT WEB SYSTEMS
Locations: Footscray Park, Hong Kong, Malaysia, Singapore
Pre-requisites: RMCS802 - INFORMATION SYSTEMS
Descriptions: The rapid development of Web technology has made World Wide
Web an important and popular application platform for disseminating information
and searching information as well as conducting business. This subject introduces
students the recent advances in web technology for intelligent web systems and
applications development topics on Web search, Web mining, linkage analysis, Web
communities, web services and semantic Web. After the completion of this study,
students will have a deep understanding in this developing area and be able to
develop applications based on the knowledge learnt.
Credit Points: 12
Learning Outcomes: To be advised.
Class Contact: Two hour lectures and 1 hour laboratory per week
Required Reading: Zhang Y. J. Yu and J Hou, Web Community: Analysis and
Assessment: Final Examination 58%, mid-semester practical test 30%, laboratory
12%.
RCMS902 OPTIMISATION TECHNIQUES

Locations: Footscray Park,

Pre-requisites: Consent of Lecturer


Credit Points: 12

Learning Outcomes: To be advised.

Class Contact: Three hours per week for one semester comprising lectures/tutorials.

Required Reading: To be advised by lecturer.

Assessment: Will be based on a combination of examination, assignments, tests and presentations according to a formula to be provided during the first week of classes.

RCM6021 LOGISTICS SOLUTIONS AND SYSTEMS

Locations: City Flinders, Liaoning-China, Sunway-Malaysia.

Pre-requisites: Nil

Descriptions: The unit of study aims to familiarise students with the process of resolving logistics related business problems through the process of conducting logistics audits and relating them to a number of problem areas. Topics include: Problem Based Learning techniques; logistics audit methodologies; problem identification; problem resolution; report preparation directed towards the analytical aspects of logistics.

Credit Points: 12

Learning Outcomes: Structure a specific problem and analyse the current industry environment in which the problem exists. Use audit report methods as a basis to provide management with options and viable solutions for a range of issues such as: Transport; Storage; Material Handling; Inventory; Procurement. Apply Problem Based Learning techniques as the learning medium.

Class Contact: Equivalent to three hours per week. Normally to be delivered as two hours of lectures and one hour of tutorials, workshops or modules or a delivery mode as approved by the Faculty of Business and Law. Unit of study equal to 12 credit points.

Required Reading: David Taylor, 1997, Global Cases in Logistics and Supply Chain Management, thomson Business Press.

Assessment: Case study/Problem solutions: 5 cases x 10 = 50%; One major project assignment, 4000 word report and oral presentation: 50%.

RCM6102 THESIS (2 UNITS)

Locations: Footscray Park,

Pre-requisites: Nil

Descriptions: The aim of this subject is to enable students to competently research an area of study utilising knowledge and skills gained in previous studies, and it consists of a project carried out by students on an individual basis. The project is expected to be an investigation of an approved topic, followed by the submission of a suitably formatted thesis in which the topic is introduced and formulated, the investigation described in detail, results and conclusions from the study are elaborated, and an extended discussion presented.

Credit Points: 24

Learning Outcomes: To be advised.

Class Contact: No formal class contact, however, there will be regular meetings with the students’ supervisors.

Required Reading: To be advised by the supervisor.

Assessment: To be advised.

RCM6103 THESIS (4 UNITS)

Locations: Footscray Park,

Pre-requisites: Nil

Descriptions: The aim of this subject is to enable students to competently research an area of study utilising knowledge and skills gained in previous studies, and it consists of a project carried out by students on an individual basis. The project is expected to be an investigation of an approved topic, followed by the submission of a suitably formatted thesis in which the topic is introduced and formulated, the investigation described in detail, results and conclusions from the study are elaborated, and an extended discussion presented.

Credit Points: 48

Learning Outcomes: To be advised.

Class Contact: No formal class contact, however, there will be regular meetings with the students’ supervisors.

Required Reading: To be advised by supervisor.

Assessment: The thesis will normally be assessed by at least two examiners from an appropriate areas of expertise.RCM6105 THESIS (1 UNIT) (part-time) (for two semesters)

RCM6104 THESIS (1 UNIT)

Locations: Footscray Park,

Pre-requisites: Nil

Descriptions: The aim of this subject is to enable students to competently research an area of study utilising knowledge and skills gained in previous studies, and it consists of a project carried out by students on an individual basis. The project is expected to be an investigation of an approved topic, followed by the submission of a suitably formatted thesis in which the topic is introduced and formulated, the investigation described in detail, results and conclusions from the study are elaborated, and an extended discussion presented.

Credit Points: 12

Learning Outcomes: To be advised.

Class Contact: No formal class contact, however, there will be regular meetings with the students’ supervisors.

Required Reading: To be advised by the supervisor.

Assessment: To be advised.

RCM6105 THESIS (1 UNIT)

Locations: Footscray Park,

Pre-requisites: Nil

Descriptions: The aim of this subject is to enable students to competently research an area of study utilising knowledge and skills gained in previous studies, and it consists of a project carried out by students on an individual basis. The project is expected to be an investigation of an approved topic, followed by the submission of a suitably formatted thesis in which the topic is introduced and formulated, the investigation described in detail, results and conclusions from the study are elaborated, and an extended discussion presented.

Credit Points: 12

Learning Outcomes: To be advised.

Class Contact: No formal class contact, however, there will be regular meetings with the students’ supervisors.

Required Reading: To be advised by the supervisor.

Assessment: To be advised.
RCM6106 THESIS (2 UNITS)
Locations: Footscray Park, Hong Kong
Pre-requisites: Nil.
Descriptions: The aim of this subject is to enable students to competently research an area of study utilising knowledge and skills gained in previous studies, and it consists of a project carried out by students on an individual basis. The project is expected to be an investigation of an approved topic, followed by the submission of a suitably formatted thesis in which the topic is introduced and formulated, the investigation described in detail, results and conclusions from the study are elaborated, and an extended discussion presented.
Credit Points: 24
Learning Outcomes: To be advised.
Class Contact: No formal class contact, however, there will be regular meetings with the students’ supervisors.
Required Reading: To be advised by supervisor.
Assessment: The thesis will normally be assessed by at least two examiners from an appropriate area of expertise.

RCM6107 THESIS (2 UNITS)
Locations: Footscray Park,
Pre-requisites: Nil
Descriptions: The aim of this subject is to enable students to competently research an area of study utilising knowledge and skills gained in previous studies, and it consists of a project carried out by students on an individual basis. The project is expected to be an investigation of an approved topic, followed by the submission of a suitably formatted thesis in which the topic is introduced and formulated, the investigation described in detail, results and conclusions from the study are elaborated, and an extended discussion presented.
Credit Points: 24
Learning Outcomes: To be advised.
Class Contact: No formal class contact, however, there will be regular meetings with the students’ supervisors.
Required Reading: To be advised by the supervisor.
Assessment: To be advised.

RCM6501 IMAGE PROCESSING ALGORITHMS
Locations: Footscray Park,
Pre-requisites: Nil.
Descriptions: An introductory subject which covers the fundamental algorithms used in image processing and pattern recognition. The topics include: point, algebraic and geometric operations; smoothing and edge detection, linear convolution, median and max/min filters, segmentation, though methods, morphological operations; image coding and compression. Introduction to pattern recognition algorithms. Artificial neural networks for pattern recognition, face recognition.
Credit Points: 12
Learning Outcomes: To be advised.
Class Contact: Three hours per week for one semester comprising lectures/practicals/tutorials.
Required Reading: To be advised by lecturer.
Assessment: Will be based on a combination of examination, assignments, tests and presentations according to a formula to be provided during the first week of classes. Final examination, 70%; assignments and laboratory works, 30%.

RCM6601 RELIABILITY AND MAINTENANCE
Locations: To be advised.
Pre-requisites: To be advised.
Descriptions: To be advised.
Credit Points: 12
Learning Outcomes: To be advised.
Class Contact: To be advised.
Required Reading: To be advised.
Assessment: To be advised.

RCM6606 TIME SERIES ANALYSIS
Locations: Footscray Park,
Pre-requisites: RCM5601 - FORECASTING OR equivalent.
Credit Points: 12
Learning Outcomes: To be advised.
Class Contact: Three hours per week comprising two hours lecture and one hour laboratory.
Required Reading: To be advised by lecturer
Assessment: Final examination, 50%; project, 50%.

RCM6607 STATISTICAL COMPUTING
Locations: Footscray Park,
Pre-requisites: Nil.
Credit Points: 12
Learning Outcomes: To be advised.
Class Contact: Three hours per week for one semester comprising lecture and practical.
Required Reading: To be advised by lecturer.
Assessment: To be advised.

RCM6608 MULTIVARIATE ANALYSIS
Locations: Footscray Park, Hong Kong, Malaysia, Singapore
Pre-requisites: To be advised.
Descriptions: This subject extends the concepts of estimation and statistical analysis...
to handle problems involving many dependent variables. Some of the more commonly used multivariate statistical procedures are presented in detail. The topics consist of: Covariance and Correlation: Population and sample covariance and correlation matrices; properties and tests. Linear combinations and multiple and partial correlation. Multivariate Normal Distribution: Features, properties and the key role it plays in many multivariate statistical procedures. Tests on mean vectors. Specific Procedures: Multivariate multiple regression, multivariate analysis of variance, canonical correlation, discriminant analysis, principal components, factor analysis and clustering techniques.

Credit Points: To be advised.

Class Contact: Three hours per week for one semester comprising lecture and tutorial.

Required Reading: To be advised by lecturer.

Assessment: Will be based on a combination of examination, assignments, tests and presentations according to a formula to be provided during the first week of classes.

RCM6702 INTERNET DATA REPRESENTATION 1

Locations: Footscray Park, Hong Kong, Malaysia

Pre-requisites: RCM6822 Internet Programming or equivalent subject.

Descriptions: DRL data access and use; Metadata, such as Resource Description Framework; DRL tools; DRL definition and declaration, such as XML Schema; Parsers and validators; Presentation of DRL data; Research applications of the DRL.

Credit Points: 12

Learning Outcomes: To be advised.

Class Contact: Two hour lecture and one laboratory/tutorial per week.


Assessment: Final examination, 70%; Assignments, 30%.

RCM6710 INTERNET DATA MANAGEMENT 1

Locations: Footscray Park, Sydney, Hong Kong, Malaysia

Pre-requisites: RCM2313 - SOFTWARE DEVELOPMENT OR Internet Programming subject.

Descriptions: Introduction to Class; Introduction to ASP.NET; Introduction to Visual Studio.NET; Using Server Controls; Using ASP.NET Rich Controls; Using Visual Basic. NET Within an ASP.NET Page; Managing Data Sources; Building Data-Driven ASP.NET Applications; Building Data-Driven Web Applications; Configuring an ASP.NET Application; Troubleshooting and Deploying an ASP.NET Application.

Credit Points: 12

Learning Outcomes: To be advised.

Class Contact: Three hours per week for one semester, comprising one two-hour lecture and one one-hour laboratory/tutorial.

Required Reading: Introduction to ASP.NET, Kathleen Kalota, © 2002 Course Technology, 0-619-06321-1.

Assessment: 15% Labs 35% Assignment 25% Mid-Semester Test 25% Final Test In order to pass, students must obtain at least 25% of Labs and Assignment, and 25% of Tests in this subject.

RCM6812 CRYPTOGRAPHY COMPUTER & NETWORK SECURITY

Locations: Footscray Park, Campus

Pre-requisites: A year of tertiary mathematics


Credit Points: 12

Learning Outcomes: At the completion of the subject, students should:

• understand the theoretical algorithms which underlay modern cryptography,
• be able to implement these algorithms in Java,
• understand how a cryptosystem is used as part of a security system,
• recognise the strengths and limitations of cryptography,
• be able to apply public-key or secret-key cryptosystems to a variety of security tasks.

Class Contact: 3 hours/week: 2 lectures and 1 computer laboratory

Required Reading: Supplied notes

Assessment: 2 mid semester tests: 10% each (1 hour duration)1programming project:15%1final exam:65% (3 hour duration)

RCM6813 INTERNET SECURITY

Locations: Footscray Park,

Pre-requisites: RCM5800 - OBJECT ORIENTED PROGRAMMING GD1


Credit Points: 12

Learning Outcomes: At the completion of the subject, students should:

• understand the theoretical algorithms which underlay modern network security,
• be able to implement these algorithms in Java,
• understand how a cryptosystem is used as part of a security system,
• recognise the strengths and limitations of cryptography,
• recognise and use appropriate security measures for a variety of security tasks.

Class Contact: 3 hours/week: 2 lectures and 1 computer laboratory.

Required Reading: Supplied notes

Assessment: Two mid-semester tests: 15% each (1 hour duration) Final exam: 70% (3 hour duration)
RCM6814 ENTERPRISE - WIDE COMPUTING

Locations: Footscray Park.
Pre-requisites: RCM5800 - OBJECT ORIENTED PROGRAMMING GD1


Credit Points: 12

Learning Outcomes: On successful completion of this subject, student should be able to:

- develop electronic commerce applications with Internet and World Wide Web technology;
- understand how to build secure electronic commerce with information security technology and payment systems;
- make business trend prediction with data mining technology.

Class Contact: 3 hours/week: lectures, tutorials, seminars and computer laboratory


Assessment: Examination (70%): 3 hours duration, closed book written paper. Teamwork assignment: case study of electronic commerce development for group working. This technology based assignment with a level of difficulty appropriate for 30% of the total mark in the subject.

RCM6815 THEORETICAL COMPUTER SCIENCE 1

Locations: Footscray Park, Hong Kong, Malaysia, Singapore

Pre-requisites: To be advised.

Descriptions: Theoretical computer science is the foundation of computer science and this subject introduces some of the central topics in theoretical computer science. It covers computability theory, formal languages, logic and automated deduction, computational complexity (including NP-completeness), and programming language semantics.

Credit Points: 12

Learning Outcomes: To be advised.

Class Contact: Three hours per week for one semester, comprising two hours of lectures and one hour of laboratory.


Assessment: Assignment 40% and final examination 60%.

RCM6819 USER INTERFACE DESIGN

Locations: Footscray Park, Hong Kong.

Pre-requisites: RCM6822 Internet Programming


Credit Points: 12

Learning Outcomes: To be advised.

Class Contact: 13 x three hour lectures/tutorials.


Assessment: Assignment, 40%; final examination, 60%.

RCM6820 DISTRIBUTED SYSTEMS

Locations: Footscray Park, Hong Kong

Pre-requisites: To be advised.

Descriptions: This subject will study advanced topics in Networking with emphasis on Distributed Systems. After completing the subject the students will have gained a understanding of the following topics: OSI layers, Client-Server models and group programming, Networking programming, Distributed Systems

Credit Points: 12

Learning Outcomes: To be advised.

Class Contact: Three hours per week two hours lecture and one-hour laboratory/tutorial.


Assessment: Final examination 70%. Assignment/Test 30%.

RCM6821 DECISION SUPPORT TECHNOLOGY

Locations: To be advised., Hong Kong, Footscray

Pre-requisites: Nil.

Descriptions: Processes and phases of organisational decision making and modelling. Online analytic processing (OLAP) vs online transaction processing (OLTP). Decision support framework and applications. Data requirements and benefits of decision support systems. Structure, components and types of decision support systems. Data mining concepts. Data warehouse vs production systems. Warehouse data characteristics and requirements. Data fusion and data scrubbing. Data models for data warehouse and data mart. Star schemas and hypercubes. Multidimensional analysis ROLAP MOLAP and HOLAP. Data warehouse administration. Warehouse database management technology.

Credit Points: 12

Learning Outcomes: To be advised.

Class Contact: Three hours per week two hours lecture and one-hour laboratory/tutorial.

Required Reading: To be advised.

Assessment: Final examination 70%. Assignment/Test 30%.

RCM6822 INTERNET PROGRAMMING

Locations: Footscray Park, Hong Kong

Pre-requisites: Competency in Java.


Credit Points: 12

Learning Outcomes: To be advised.

Class Contact: Two hour lectures and one hour laboratory per week

Required Reading: Deitel, Deitel and Nieto, 2001 or later, Internet and World Wide Web: How to Program, Prentice Hall. D.R. Watson’s five hypertexts on Internet
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Programming, all available on the school's intranet at \samples\scm6822\Launcher.html or http://melba.vu.edu.au/~scm6822/

Assessment: Final Examination 58%, mid-semester practical test 30%, laboratory 12%.

RCM6823 DATABASE DESIGN, MANAGEMENT AND ADMINISTRATION

Locations: Footscray Park, Hong Kong

Pre-requisites: Good knowledge of relational databases; basic understanding of UNIX.


Credit Points: 12

Learning Outcomes: To be advised.

Class Contact: Two hour lectures and one hour laboratory per week.


Assessment: Final Examination, 70%; Assignment, 30%.

RCM6825 MULTIMEDIA SYSTEMS DESIGN AND DEVELOPMENT

Locations: Footscray Park,

Pre-requisites: RCM5821 - INTRODUCTION TO MULTIMEDIA SYSTEMS

Descriptions: The aim of this subject is to develop a clear understanding of the processes and current methodologies used in the design and development of multimedia systems. The subject introduces some new 3D web graphics technologies related to multimedia system development, including Java 3D and Virtual Reality Modeling Language (VRML)

Credit Points: 12

Learning Outcomes: To be advised.

Class Contact: Three hours per week for one semester, comprising two one-hour lectures and one one-hour laboratory.

Required Reading: To be advised by the lecturer

Assessment: Final Examination, 50%; Project, 50%.

RCM6827 RESEARCH PERSPECTIVES IN COMPUTER SCIENCE

Locations: Footscray Park,

Pre-requisites: Enrolled Honours Student

Descriptions: Writing a research proposal, performing a literature review, writing a thesis, giving presentations, human research ethics, intellectual property.

Credit Points: 12

Learning Outcomes: To be advised.

Class Contact: To be advised.

Required Reading: To be advised

Assessment: A mix of written and oral presentations

RCM6830 KNOWLEDGE ENGINEERING AND E-COMMERCE TECHNOLOGY

Locations: Footscray Park, Hong Kong

Pre-requisites: Competency in a programming language.

Descriptions: This subject introduces students to concepts of knowledge and systems engineering with particular emphasis on electronic commerce systems. A study is made of the current and past technologies that have enabled the recent growth and establishment of electronic commerce. The supporting technologies needed for the three-tiered architecture of electronic commerce sites, i.e. front end interfaces, middleware and back end servers together with their databases, are investigated in detail and form the basis of practical exercises.

Credit Points: 12

Learning Outcomes: To be advised.

Class Contact: Three hours per week for one semester comprising two one-hour lectures and one one-hour laboratory/tutorial.

Required Reading: To be advised by lecturer.

Assessment: Final examination, 80%; assignment/tests, 20%.

RCM6841 SOFTWARE ENGINEERING 2

Locations: Footscray Park, Hong Kong, Malaysia

Pre-requisites: RCM6844 Software Engineering 1.

Descriptions: This subject reviews the software engineering knowledge areas, analyse software process improvement methods and introduces new progresses of software engineering. Topics include capability maturity models, requirement management, project planning, project tracking and oversight, configuration management, quality assurance, and agent oriented software engineering.

Credit Points: 12

Learning Outcomes: To be advised.

Class Contact: Two hours lecture and one hour laboratory/tutorial per week for one semester.

Required Reading: To be advised.

Assessment: Final examination, 70%; assignment, 30%. Students must obtain at least 40% standard in the assignment and at least 40% on the final examination, and obtain an overall mark of 50%.

RCM6842 ADVANCED TOPICS IN SOFTWARE ENGINEERING

Locations: Footscray Park, Hong Kong, Malaysia, Singapore

Pre-requisites: RCM6841 Software Engineering 2.

Descriptions: Analysis, discussion and implementation of issues from research papers in an area of Software Engineering. For instance, papers on Goal-based methods in Scenario-based Design. Topics include: Analysing Requirements,Prototyping, Usability Evaluation, etc.

Credit Points: 12

Learning Outcomes: To be advised.

Class Contact: Two hour lecture and one hour laboratory per week.

Required Reading: To be advised.

Assessment: Contributions to projects, laboratories and seminars, 50%; assignments, 50%.
RCM6843 SOFTWARE ENGINEERING PROJECT

Locations: Footscray Park, Hong Kong, Malaysia

Pre-requisites: RCM6841 - SOFTWARE ENGINEERING 2OR equivalent.

Descriptions: This is a project based unit and will be organised as follows:
- each student will work on a project as a member of a software development team, or on a personal software project;
- each project will focus on an industrial and business application such as computer games, financial systems, medical information systems, etc;
- each project requires the application of knowledge and skills in one or more of the computing and software engineering areas including user interface development, database management systems, networking, wireless / mobile computing, web based and general application development environments;
- each project practices the software engineering process, generating working products of requirement document, design document, testing report, system manual, project plan and progress log.

Credit Points: 12

Learning Outcomes: On successful completion of this unit, it is expected that students will be able to:
- understand and gain experience in managing software development process
- have ability in systematic development of software systems
- gain experience in software development in at least one of industrial and business applications such like computer games, financial systems, medical information systems, etc
- demonstrate good ability in applying knowledge and skills in the computing and software engineering areas, including user interface development, database management systems, networking, wireless / mobile computing, web based and general application development environments.

Class Contact: Thirty six (36) hours over one 12-week semester comprising of three (3) hours project session per week.

Required Reading: Project guideline.

Assessment: Two project oral presentations, 15%; each; System document (requirement, design, testing report, manual, plan and progress log), 70%*.* System document will be evaluated as a whole. No mark will be granted to each individual component.

RCM6844 SOFTWARE ENGINEERING 1

Locations: Footscray Park, Hong Kong, Malaysia.

Pre-requisites: Nil.

Descriptions: This subject covers software engineering knowledge in areas of software management, software verification and validation. Review topics including software process and software life-cycle models, software process improvement, requirement, classical analysis and design, object oriented analysis and design. Detailed topics include inspection, review, software testing, software estimation, project planning, project personnel and organization.

Credit Points: 12

Learning Outcomes: To be advised.

Class Contact: Two hours lecture and one hour laboratory/tutorial per week for one semester.

Required Reading: To be advised.

Assessment: Final examination, 70%; assignment, 30%. Students must obtain at least 40% standard in the assignment and at least 40% on the final examination, and obtain an overall mark of 50%.

RCM6845 OBJECT ORIENTED TECHNOLOGY

Locations: Footscray Park, Hong Kong, Malaysia

Pre-requisites: Two semesters of Java programming.

Descriptions: JavaBeans Component Model - Overview, Introspection, Properties of Beans; Networking - I.net Address Class, URL Class, URLEncoder Class, URLConnection Class, Sockets, Server Sockets, Datagram Client/Server; Servlet overview and architecture, HttpServlet Class, HttpSession Class, ServletRequest Interface, ServletResponse Interface, Handling HTTP get and post Requests, setting up the Apache Tomcat Server, deploying a web application, session tracking; JSP Overview, scripting components, standard actions, directive, custom tag libraries; EJB Overview, session beans, EJB transactions.

Credit Points: 12

Learning Outcomes: To be advised.

Class Contact: Two hours lecture and one hour laboratory/tutorial per week for one semester.


Assessment: Final examination, 70%; Practical/Assignment, 30%. Students must obtain at least 40% standard in the practicals and assignment and at least 40% on the final examination, and obtain an overall mark of 50%.

RCM6846 OBJECT ORIENTED DESIGN

Locations: Footscray Park, Hong Kong, Malaysia

Pre-requisites: RCM5824 Object Oriented Programming GD2 or equivalent.

Descriptions: Unified Modeling Language (UML); Introduction to Rational Rose; Unified Method and the design of the domain layer; Concepts of persistence and transactions in an OO context; Interaction layer design considerations; Introduction to an Object Oriented development environment and OODBMS (JADE); Implementation and deployment models; Packages, subsystems and models; Design patterns and frameworks.

Credit Points: 12

Learning Outcomes: To be advised.

Class Contact: Two hours lecture and one hour laboratory/tutorial per week for one semester.


Assessment: Final examination, 70%; assignment, 30%. Students must obtain at least 40% standard in the assignment and at least 40% on the final examination, and obtain an overall mark of 50%.

RCM6902 MATHEMATICAL PROGRAMMING 1

Locations: Footscray Park,

Pre-requisites: Consent of lecturer.

Descriptions: Overview of mathematical programming; review of linear constraints, convexity; the primal and dual problems; the simplex method, slack variables, optimality, post-optimality and sensitivity analysis, integer (linear) programs; commercial packages for mathematical programming, Applied LP Models.

Credit Points: 12

Learning Outcomes: To be advised.

Class Contact: Three hours per week for one semester comprising lectures/tutorials.

Required Reading: To be advised by lecturer.

Assessment: Will be based on a combination of examination, assignments, tests and presentations according to a formula to be provided during the first week of classes.
RM6904 SIMULATION
Locations: Footscray Park,
Pre-requisites: Nil.
Descriptions: Problem formulation using the concepts of entities, attributes, files, events etc. Generating random numbers from discrete and continuous distributions. Practical coding experience using SLAMII including debugging and verifying that the translated model executes as intended. Systems approach, flow diagram and problem analysis for discrete event systems. Network modelling involving queuing, resources, pre-emption, priorities and machine breakdown. Design and analysis of simulation experiments. Practical coding experience using SLAMII.
Credit Points: 12
Learning Outcomes: To be advised.
Class Contact: Three hours per week for one semester comprising lectures/tutorials.
Required Reading: To be advised by lecturer.
Assessment: Will be based on a combination of examination, assignments, tests and presentations according to a formula to be provided during the first week of classes.

RM6905 SEQUENCING AND SCHEDULING
Locations: Footscray Park,
Pre-requisites: Nil.
Credit Points: 12
Learning Outcomes: To be advised.
Class Contact: Three hours per week for one semester comprising lectures and tutorials.
Required Reading: To be advised by lecturer.
Assessment: Will be based on a combination of examination, assignments, tests and presentations according to a formula to be provided during the first week of classes.

RM6906 OPTIMISATION TECHNIQUES
Locations: Footscray Park,
Pre-requisites: Consent of lecturer.
Descriptions: Lecture Program Topics: Decision Tree and AHP; Maximal flow problems, Shortest-route problem, Minimal spanning tree problem, Estimating network flows; Queuing Theory; Combinatorial Models: CSP, SCP, & BPP; Spreadsheet Analysis.
Credit Points: 12
Learning Outcomes: To be advised.
Class Contact: Three hours per week for one semester comprising lectures/tutorials.
Required Reading: To be advised by lecturer.
Assessment: Will be based on a combination of examination, assignments, tests and presentations according to a formula to be provided during the first week of classes.

RM8001 RESEARCH THESIS 1 FULL TIME
Locations: To be advised.,
Pre-requisites: To be advised.
Descriptions: This unit of study is part of a research degree program. Information on research topics for the Faculty of Health, Engineering and Science may be found on the faculty website at the following link: http://www.vu.edu.au/Faculties/HealthEngineeringandScience/ResearchandResearchTraining/MajorResearchAreas/
Assessment criteria and Core Research Graduate Attributes can be found on the Office for Postgraduate Research website at the following link: http://www.vu.edu.au/Research/OfficeforPostgraduateResearch/PolicyProcessesandGuidelines/
Credit Points: 48
Learning Outcomes: To be advised.
Class Contact: To be advised.
Required Reading: To be advised.
Assessment: To be advised.

RM8002 RESEARCH THESIS 2 FULL TIME
Locations: To be advised.,
Pre-requisites: To be advised.
Descriptions: This unit of study is part of a research degree program. Information on research topics for the Faculty of Health, Engineering and Science may be found on the faculty website at the following link: http://www.vu.edu.au/Faculties/HealthEngineeringandScience/ResearchandResearchTraining/MajorResearchAreas/
Assessment criteria and Core Research Graduate Attributes can be found on the Office for Postgraduate Research website at the following link: http://www.vu.edu.au/Research/OfficeforPostgraduateResearch/PolicyProcessesandGuidelines/
Credit Points: 48
Learning Outcomes: To be advised.
Class Contact: To be advised.
Required Reading: To be advised.
Assessment: To be advised.

RM8011 RESEARCH THESIS 1 PART TIME
Locations: To be advised.,
Pre-requisites: To be advised.
Descriptions: This unit of study is part of a research degree program. Information on research topics for the Faculty of Health, Engineering and Science may be found on the faculty website at the following link: http://www.vu.edu.au/Faculties/HealthEngineeringandScience/ResearchandResearchTraining/MajorResearchAreas/
Assessment criteria and Core Research Graduate Attributes can be found on the Office for Postgraduate Research website at the following link: http://www.vu.edu.au/Research/OfficeforPostgraduateResearch/PolicyProcessesandGuidelines/
Credit Points: 24
Learning Outcomes: To be advised.
Class Contact: To be advised.
Required Reading: To be advised.
Assessment: To be advised.
RCM8012 RESEARCH THESIS 2 PART TIME
Locations: To be advised.
Pre-requisites: To be advised.
Descriptions: This unit of study is part of a research degree program. Information on research topics for the Faculty of Health, Engineering and Science may be found on the faculty website at the following link: http://www.vu.edu.au/Faculties/HealthEngineeringandScience/ResearchandResearchTraining/MajorResearchAreas/
Assessment criteria and Core Research Graduate Attributes can be found on the Office for Postgraduate Research website at the following link: http://www.vu.edu.au/Research/OfficesforPostgraduateResearch/PoliciesProcessesandGuidelines/
Credit Points: 24
Learning Outcomes: To be advised.
Class Contact: To be advised.
Required Reading: To be advised.
Assessment: To be advised.

RCS1000 MEDICAL, FORENSIC AND ANALYTICAL CHEMISTRY 1
Locations: Werribee,
Pre-requisites: Nil.
Descriptions: Overview and introduction to the principles and methodology of medical, forensic and analytical chemistry. Medical chemistry: introduction to medical therapeutics and diagnostics, organic and inorganic medical chemistry, nuclear medicine and drug design. Forensic chemistry: introduction to physical evidence, fire and explosion investigation, firearm investigation, drug analysis and the analysis of chemical evidence such as fibres. An introduction to the relevant areas of analytical chemistry include an overview of measurements in the analytical laboratory, solutions and concentrations, and an introduction to classical analytical chemistry including volumetric analysis and methods based on analytical separations.
Credit Points: 12
Learning Outcomes: To be advised.
Class Contact: Three hours of lectures and one hour of tutorials/demonstrations per week.
Assessment: Written examination, 100%.

RCS1008 INDUSTRIAL EXPERIENCE 1A
Locations: Werribee,
Pre-requisites: Nil.
Descriptions: Content No formal content; students will be required to provide evidence of 12months full-time (or equivalent part-time) employment in a Chemical Industry acceptable to the Head of School. Students should consult with appropriate staff prior to commencing the subject to ensure their situation is acceptable to the School.
Credit Points: 12
Learning Outcomes: To be advised.
Class Contact: Class Contact No set contact hours.
Required Reading: To be advised.
Assessment: Assessment Evidence of appropriate industrial experience in the form of a letter from the employer detailing the experience is required.

RCS1110 CHEMISTRY FOR BIOLOGICAL SCIENCES A
Locations: St Albans,
Pre-requisites: Nil.
Descriptions: Chemistry relevant to biological sciences including the topics which follow: Matter and energy, Measurement, Atomic theory and the periodic table, Chemical and physical bonding, Chemical formulae, reactions and equations, Molecular structure and the state of matter, Solutions and aqueous chemistry.
Credit Points: 12
Learning Outcomes: On successful completion of this unit, students are expected to be able to:
- Define basic chemical principles and practices which will underpin specialised chemical studies in subsequent years.
- Class Contact: Seventy two (72) hours or equivalent for one semester comprising lectures, tutorials and practical classes.
Assessment: Assignment, 10%; Practical work, 20%; Examination, 70%.

RCS1120 CHEMISTRY FOR BIOLOGICAL SCIENCES B
Locations: St Albans,
Pre-requisites: RCS1110 Chemistry for Biological Sciences A or equivalent.
Descriptions: Chemistry topics relevant to biological sciences and which incorporate specific reference to biological systems. Topics will include the following: Basic physical chemistry including chemical equilibrium and kinetics, acids and bases, Thermochemistry, Oxidation and reduction, Inorganic and nuclear chemistry with reference to selected elements of biological chemistry, Organic chemistry and biological chemistry.
Credit Points: 12
Learning Outcomes: To be advised.
Class Contact: Six hours per week for one semester comprising three hours of lectures, one hour tutorial and two hour practical classes.
Assessment: Assignment, 10%; Practical work, 20%; Examination, 70%.

RCS1601 CHEMISTRY 1A
Locations: Footscray Park,
Pre-requisites: Nil.
Descriptions: Chemistry methods and measurements; atomic theory and the periodic table; structures and properties of ionic and covalent compounds; chemical equation, reactions and solutions; co-ordination chemistry, acids and bases.
Credit Points: 12
Learning Outcomes: On successful completion of this unit, students are expected to be able to:
- Identify the elements in the periodic table and state their properties in relation to their position in the periodic table;
- Identify the types of bonds (ionic and covalent) and, using the concept of Lewis structure and VSEPR, draw the geometry of the molecules;
- Describe the mole concept and its relationship to Avogadro's number;
• Draw and complete stoichiometric equations;
• Identify the geometry of various coordination complexes and indicate the structural name of these complexes;
• Identify the various types of chemical reactions (precipitation reactions, acid-base reactions and redox reactions).

Class Contact: Eight-four (84) hours or equivalent for one semester comprising lectures, tutorials and laboratories.


Assessment: In order to obtain a pass or higher in this graded unit, normally all components of assessment must be passed.

Laboratory Work Laboratory Work 30%

RC1602 CHEMISTRY 1B

Locations: Footscray Park,

Pre-requisites: Nil.

Descriptions: States of matter; physical and chemical changes (energy, rate and equilibrium); oxidation-reduction reaction (electrochemistry); the nucleus, radioactivity and nuclear medicine. Organic chemistry: saturated and unsaturated hydrocarbons; alcohol phenols, thiols and ethers; aldehydes and ketones; carboxylic acids and their derivatives; amines and amides; biological chemistry.

Credit Points: 12

Learning Outcomes: On successful completion of this unit, students are expected to be able to:
• Identify the various states of matter (gaseous, liquid and solid) and to state the various properties and intermolecular interactions of these states;
• Cite the first law of thermodynamics including enthalpy of chemical reactions, calorimetry, standard enthalpy of formation and reaction and the concept of Hess’s law;
• Identify the equilibrium constant for a variety of chemical reactions;
• Identify the various factors that influence the rate of a chemical reaction;
• Complete nuclear equations and state the factors affecting nuclear stability;
• Identify the various functional groups associated with organic molecules.

Class Contact: Eight-four (84) hours or equivalent for one semester comprising lectures, tutorials and laboratories.


Assessment: In order to obtain a pass or higher in this graded unit, normally all components of assessment must be passed.

Other Practical Work 30%

RC2000 INDUSTRIAL EXPERIENCE 2A

Locations: Werribee,

Pre-requisites: Nil.

Descriptions: No formal content; students will be required to provide evidence of 12 months full-time (or equivalent part-time) employment in a Chemical Industry acceptable to the Head of School. Students should consult with appropriate staff prior to commencing the subject to ensure their situation is acceptable to the School.

Credit Points: 12

Learning Outcomes: To be advised.

Class Contact: No set contact hours.

Required Reading: To be advised.

Assessment: Assessment Evidence of appropriate industrial experience in the form of a letter from the employer detailing the experience is required.

RC2100 ORGANIC CHEMISTRY 2A

Locations: Werribee,

Pre-requisites: RCS1602 Chemistry 1B

Descriptions: The aims of this unit are to introduce students to fundamental aspects of synthetic organic chemistry, organic reaction mechanisms along with applications of spectroscopy to organic chemistry. The topics covered include: aromaticity, electrophilic and nucleophilic aromatic substitution reactions. The chemistry of carbanions and of carbocations. Practical exercises providing substantial ‘hands-on’ experience with chromatographic and spectroscopic instrumentation will complement the lecture material.

Credit Points: 12

Learning Outcomes: On successful completion of this unit, it is expected that students will be able to:
• use mechanisms to explain simple organic chemical reactions;
• describe the factors which control simple organic reactions;
• characterise aromatic compounds and describe their common reactions;
• provide examples of simple reactions involving carbanions and carbocations;
• perform common practical organic chemistry manipulations.

Class Contact: Two hours of lectures and three hours of practical classes per week for one semester.


Assessment: End-of-semester examination, 70% (P2, I2, W2); Practical work, 20% (P2, A2, I2, W2, O2); Assignment, 10% (P2, I2).

RC2200 ORGANIC CHEMISTRY 2B

Locations: Werribee,

Pre-requisites: RCS2100 Organic Chemistry 2A

Descriptions: The aims of this unit are to build upon the concepts introduced in RCS2100 Organic Chemistry 2A. Topics covered will include: the chemistry of free radicals; an introduction to polymer chemistry; photochemistry and molecular orbital reactions and an introduction to the design of synthetic sequences. Practical exercises providing substantial ‘hands-on’ experience with chromatographic and spectroscopic instrumentation will complement the lecture material.

Credit Points: 12

Learning Outcomes: On successful completion of this unit, it is expected that students will be able to:
• define free radicals and explain their common reactions;
• describe and explain basic polymers, their preparation and properties;
• describe and evaluate photochemical and pericyclic reactions;
• utilise the disconnection approach to devise practical syntheses of simple organic compounds.

Class Contact: Two hours of lectures and three hours of practical classes per week for one semester.

Assessment: End-of-semester examination, 70% (P2, I2, W2); Practical work, 20% (P2, A2, I2, W2, O2); Assignment, 10% (P2, I2).

RCS2502 MEDICAL CHEMISTRY 2

Locations: Werribee,

Pre-requisites: RCS1000 Medical, Forensic and Analytical Chemistry 1 or equivalent.

Descriptions: The aim of this subject is to introduce students to aspects of Medical Chemistry. The topics covered include Nuclear Chemistry and the application of Radionuclides in Medical Chemistry. Bioorganic Chemistry and the role of inorganic compounds in medicine. The synthesis and analysis of proteins, the structure and physiology of carbohydrates and lipids and a brief introduction to drug/molecule interactions.

Credit Points: 12

Learning Outcomes: At the conclusion of this unit students will be able to:
- discuss the importance of medical inorganic chemistry and minerals in health;
- identify the structure carbohydrates and lipids; and explain their analysis;
- characterise amino acids and proteins and explain their preparation, analysis and basic structure;
- discuss the principles behind drug-protein interactions.

Class Contact: Two hours of lectures and three hours of practical classes per week for one semester.


Assessment: End-of-semester examination, 80%; practical work 20%.

RCS2503 FORENSIC CHEMISTRY 2

Locations: Werribee,

Pre-requisites: RCS1000 Medical, Forensic & Analytical Chemistry 1 or equivalent.

Descriptions: This subject builds upon the concepts introduced in Medical, Forensic & Analytical Chemistry 1 and introduces students to forensic chemical techniques. Topics covered include: arson investigation, forensic toxicology, environmental pollutants and an introduction to molecular biology. Practical exercises provide 'hands-on' experience in a range of forensic chemical techniques.

Credit Points: 12

Learning Outcomes: At the conclusion of this unit students will be able to:
- describe current practices in arson investigation including taking samples, recovery and gas chromatographic analysis of ignitable liquid residues and identification of accelerants;
- develop analytical procedures to investigate environmental pollutants;
- develop extraction procedures for drugs and metabolites in biological samples;
- define genome and chromosome structure and the nature of repeat regions;
- describe the principles of DNA replication and PCR;
- perform a number of forensic analyses including Duquenois-Levine test for marijuana, fingerprinting, Plaster of Paris casts of footprints, colour tests for drugs in white powders, drug analysis using IR and UV-Vis spectrophotometry, inks by TLC, alcohol by GC and metal poisons by AA.

Class Contact: Two hours of lectures and three hours of practical classes per week for one semester.


Assessment: A combination of assignments, 15%; practical work, 30%; and examination, 55%.

RCS2601 ANALYTICAL CHEMISTRY 2A

Locations: Werribee,

Pre-requisites: RCS1601 Chemistry 1A, RCS1602 Chemistry 1B or equivalent.

Descriptions: Statistics of errors and treatment of analytical data. Sampling of complex materials. Analytical methods based on emission and absorption of radiation including UV visible and fluorescence spectroscopy. Introduction to NMR and mass spectrometry. Practical exercises will provide substantial 'hands on' experience with modern analytical instruments and will illustrate important analytical and physicochemical techniques.

Credit Points: 12

Learning Outcomes: To be advised.

Class Contact: Two hours per week of lectures and three hours of laboratory classes per week for one semester.


Assessment: Students will be assessed on the basis of an examination, 70%; and practical work, 30%. Students must pass the practical component in order to pass this subject.

RCS2602 ANALYTICAL CHEMISTRY 2B

Locations: Werribee,

Pre-requisites: RCS1601 Chemistry 1A, RCS1602 Chemistry 1B or equivalent.

Descriptions: Principles of instrumentation. Chromatographic methods including gas chromatography and liquid chromatography. Introduction to electrochemical methods. Analytical separation techniques and processes. Practical exercises will provide substantial 'hands on' experience with modern analytical instruments and will illustrate important analytical and physicochemical techniques.

Credit Points: 12

Learning Outcomes: To be advised.

Class Contact: Two hours per week of lectures and three hours of laboratory classes per week for one semester.


Assessment: Students will be assessed on the basis of an examination, 70%; and practical work, 30%. Students must pass the practical component in order to pass this subject.
RCS3000 INDUSTRIAL EXPERIENCE 3A

Locations: Werribee,

Pre-requisites: Nil

Descriptions: No formal content; students will be required to provide evidence of 12months full-time (or equivalent part-time) employment in a Chemical Industry acceptable to the Head of School. Students should consult with appropriate staff prior to commencing the subject to ensure their situation is acceptable to the School.

Credit Points: 12

Learning Outcomes: To be advised.

Class Contact: Class Contact No set contact hours.

Required Reading: To be advised.

Assessment: Evidence of appropriate industrial experience in the form of a letter from the employer detailing the experience is required.

RCS3411 ENVIRONMENTAL LEGISLATION

Locations: St Albans,

Pre-requisites: Nil.


Credit Points: 12

Learning Outcomes: To be advised.

Class Contact: Four hours of lectures per week for one semester.

Required Reading: To be advised by lecturer.

Assessment: Fieldwork and assignments, 40%; examinations, 60%.

RCS3601 ANALYTICAL CHEMISTRY 3A

Locations: Werribee,

Pre-requisites: RCS2601 Analytical Chemistry 2A and RCS2602 Analytical Chemistry 2B or equivalent.

Descriptions: Chemical literature and use of library resources; modern trends in chemical analysis; review of analytical methodologies; an operational model for analytical chemistry; evaluation and criticism of analytical results; development of new analytical methods and trends in analytical research; project planning; selection and purchase of analytical equipment and apparatus; optimisation of analysis. Applications of advanced spectroscopy to organic analysis and structure elucidation. Analysis of carbohydrates, lipids, terpenes, steroids, heterocyclic compounds and proteins.

Credit Points: 12

Learning Outcomes: To be advised.

Class Contact: Two hours of lectures per week and four hours of laboratory classes per week for one semester.

Required Reading: Students are advised to buy one of the following as a reference to the lecture material.

Assessment: Students will be assessed on the basis of an examination, 70%; and practical work, 30%. Students must pass the practical component in order to pass this subject.

RCS3602 ANALYTICAL CHEMISTRY 3B

Locations: Werribee,

Pre-requisites: RCS2601 Analytical Chemistry 2A and RCS2602 Analytical Chemistry 2B or equivalent.

Descriptions: Principles, instrumentation, interferences and applications in chemical analysis of absorption and emission spectroscopy including vibrational, rotational, advanced UV visible and fluorescence spectroscopy, and flameless AAS. Electrochemical methods of analysis including ion-selective electrodes, and modern polarography and stripping voltammetry. Flow injection analysis. Capillary electrophoresis. Specialized physical techniques of analysis including thermal methods, techniques for surface analysis and the analysis of polymer molecular weights. Practical work providing substantial ‘hands on’ experience will complement the lecture material.

Credit Points: 12

Learning Outcomes: To be advised.

Class Contact: Two hours of lectures per week and four hours of laboratory classes per week for one semester.

Required Reading: Students are advised to buy one of the following as a reference to the lecture material.

Assessment: Students will be assessed on the basis of an examination, 70%; and practical work, 30%. Students must pass the practical component in order to pass this subject.

RCS3603 MEDICAL CHEMISTRY 3A

Locations: Werribee,

Pre-requisites: RCS2502 Medical Chemistry 2and RCS2100 Organic Chemistry 2A or equivalent.

Descriptions: The synthesis of new chemicals and biochemicals which mimic natural molecules. Methods used to assess the purity of synthetically generated products. Methods used for the bioassay of chemically synthesized chemical. The design of chemicals using 3D drug design.

Credit Points: 12

Learning Outcomes: At the conclusion of this unit students will be able to:

• apply the principles of various organic synthetic procedures to drug synthesis;
• categorise the different classes of protecting groups and describe their role in organic synthesis;
• evaluate various chiral synthetic methodologies and their application to drug synthesis;
• discuss the importance of X-Ray diffraction and its application to determining the structure of small molecules and proteins;
• describe the fundamentals of protein chemistry in relation to the isolation and purification of proteins;
• discuss the principles and application of combinatorial synthesis;
• utilise basic computer modelling as applied to drug design.

Class Contact: Two hours of lectures and four hours of practical classes per week.


Assessment: Practical work, 40%; final examination, 60%.
RCS3604 MEDICAL CHEMISTRY 3 B
Locations: Werribee,
Pre-requisites: RCS2502 Medical Chemistry 2.
Descriptions: Students enrolled in medical chemistry 3 will become skilled in the use of the theoretical basis of advanced physico-chemical and biochemical methods for body fluid analysis for the diagnosis of human diseases. These techniques will include ELISA assays and the analysis of human tissues using techniques such as PCR to determine the DNA profile of human tissues.
Credit Points: 12
Learning Outcomes: To be advised.
Class Contact: Two hours of lectures and four hours of practical classes per week.
Required Reading: A range of textbooks and journal articles will be recommended by the lecturer.
Assessment: Practical work, 40%; examinations, 60%.

RCS3605 FORENSIC METHODS 3A
Locations: Werribee,
Pre-requisites: RCS2503 Forensic Chemistry 2 or equivalent.
Descriptions: Forensic Methods 3A provides training in sophisticated methods of analysis as currently applied to the examination of materials that have in some way been associated with crime. Topics covered include: gun shot residue analysis, chemical fingerprinting, paint analysis and pesticide analysis. Practical exercises provide hands-on experience in a range of forensic chemical techniques.
Credit Points: 12
Learning Outcomes: At the conclusion of this Unit students will be able to:
- apply the principles of chemical fingerprinting including identifying oil from oil spills and using isotopic ratios to authenticate foodstuffs;
- describe the practice of GSR analysis including sampling, bulk analysis, particle analysis and development of powder patterns;
- describe the role of modern techniques such as GC, pyrolysis GC and energy dispersive x-ray analysis as applied to samples of forensic interest such as paint and pesticides in foodstuffs;
- perform a number of forensic analyses including GSR on hands using FAAS, quinine in urine by fluorometry, drugs in white powders by HPLC, ignitable liquids in fire debris by GC, IR microscopy of fibres, opiates in opium powder by GCMS, refractive index of glass, DNA isolation, amplification and separation of PCR products using electrophoresis.
Class Contact: Two hours of lectures and three hours of practical classes per week for one semester.
Assessment: Practical work, 30%; and assignments/examination, 70%.

RCS3606 FORENSIC METHODS 3B
Locations: Werribee,
Pre-requisites: RCS2503 Forensic Chemistry 2 or equivalent.
Descriptions: Forensic Methods 3B provides training in sophisticated methods of analysis as currently applied to the examination of materials that have in some way been associated with crime. Various topics in this subject will be delivered by practicing forensic scientists. These include crime scene investigation, chemical trace evidence, fire and explosion investigation, fingerprints, drug analysis, clandestine laboratory scene investigation, forensic toxicology and DNA profiling. Legal studies is also included and introduces students to the legal system, courtroom practices and expert testimony. Practical exercises provide hands-on experience in a range of forensic chemical techniques.
Credit Points: 12
Learning Outcomes: At the conclusion of this unit students will be able to:
- discuss important considerations in the examination of different types of physical evidence;
- describe the role of DNA profiling in forensic science; describe the nature of molecular markers and carry out laboratory procedures related to the above such as DNA amplification and separation;
- define the role of forensic science within the legal system;
- perform a number of forensic analyses including GSR on hands using FAAS, quinine in urine by fluorometry, drugs in white powders by HPLC, ignitable liquids in fire debris by GC, IR microscopy of fibres, opiates in opium powder by GCMS, refractive index of glass, DNA isolation, amplification and separation of PCR products using electrophoresis.
Class Contact: Two hours of lectures and three hours of practical classes per week for one semester.
Assessment: Practical work, 30%; and assignments/examination, 70%.

RCS3607 ADVANCED ANALYTICAL ANALYSES
Locations: Werribee,
Pre-requisites: RCS3601 Analytical Chemistry 3A
Descriptions: This subject will introduce FT-NMR and associated techniques, 13C NMR, decoupling, relaxation, nOe’s and DEPT. The role and interpretation of 2D NMR experiments such as Cosey, HSBC and NOESY. The use of LC/MS and MSn in the identification and characterisation of a range of chemical classes will be discussed. Particular emphasis will be placed upon single ion monitoring and fragment monitoring. Other techniques including fluorescence spectroscopy and its role in chemical analysis will also be discussed.
Credit Points: 6
Learning Outcomes: To provide students with an understanding of the design, interpretation and application of a range of advanced analytical techniques.
Class Contact: 2 hrs of lectures per week
Assessment: Assessed by two assignments and a written examination. Each assignment is worth 20% and has a 1000 word limit and may be supplemented with an appropriate number of figures, charts and/or tables. The assignments will be spread evenly over the semester. The written examination is worth 60% and there are no specific conditions for the exam.

RCS3608 POLYMER TECHNOLOGY
Locations: Werribee,
Pre-requisites: SCS2521 Applied Chemistry 2 - Organic
Descriptions: This unit will introduce students to the preparation of polymers, including radical and ionic polymerisation as applied to chain reaction and step reaction polymerisation reactions. The determination of polymer molecular weight...
and analysis using GPC will be presented. The physical properties of polymers and their importance to the plastics industry will also be a focus of this subject.

Credit Points: 6

Learning Outcomes: To provide students with an understanding of polymer chemistry as it relates to the plastics industry.

Class Contact: 2 hrs of lectures per week


Assessment: Assessed by one assignment and a written examination. The assignment is worth 30% and has a 1000 word limit and may be supplemented with an appropriate number of figures, charts and/or tables. The written examination is worth 70% and there are no specific conditions for the exam.

**RCS4201 HONOURS COURSEWORK**

Locations: Werribee,

Pre-requisites: Satisfactory completion of an appropriate undergraduate degree program with at least a credit average in the final year.

Descriptions: The major focus of the course component is research methodology and subjects include experimental design, statistics in research, data analysis, computer applications and software, literature analysis and critical appraisal, ethics in research, scientific writing and data presentation.

Credit Points: 24

Learning Outcomes: To be advised.

Class Contact: An average of 10 hours per week

Required Reading: To be advised by the lecturer.

Assessment: The assessment will vary and may be based on written assignments, seminar presentations and a written examination.

**RCS4601 HONOURS PROJECT PART TIME**

Locations: Werribee,

Pre-requisites: Nil

Descriptions: The program will consist of a research project and a coursework component. The major focus of the course component is research methodology and subjects include experimental design, statistics in research, data analysis, computer applications and software, literature analysis and critical appraisal, ethics in research, scientific writing and data presentation. The research project will be undertaken in one of the research areas of the School and may, subject to approval, be undertaken at an external location. Required Reading To be advised by the lecturer. Normally the coursework component will be conducted in the first two semesters and the research component in the third and fourth semester.

Credit Points: 24

Learning Outcomes: To be advised.

Class Contact: An average of 10 hours per week for four semesters.

Required Reading: To be advised by the lecturer. Normally the coursework component will be conducted in the first two semesters and the research component in the third and fourth semester.

Assessment: The nature of the coursework assessment will vary and may be based on written assignments, seminar presentations and a written examination. The research project assessment will consist of an oral presentation and submission of a thesis.

**RCS4602 HONOURS PROJECT**

Locations: Werribee,

Pre-requisites: To be advised.

Descriptions: This subject, the aim of which is to enable students to competently research an area of study utilising knowledge and skills gained in previous studies, consists of a project carried out by students on an individual basis. The project is expected to be a scientific investigation of an approved topic, followed by the submission of a suitably formatted thesis in which the topic is introduced and formulated; the scientific investigation described in detail; results and conclusions from the study are elaborated; and an extended discussion presented. The research project will be undertaken in one of the research areas of the School and may, subject to approval, be undertaken at an external location.

Credit Points: 48

Learning Outcomes: To be advised.

Class Contact: An average of 30 hours per week for one semester

Required Reading: To be advised by supervisor.

Assessment: The assessment will consist of an oral presentation and submission of a thesis.

**RCS4610 HONOURS PROJECT PART TIME**

Locations: Werribee,

Pre-requisites: Satisfactory completion of an appropriate undergraduate degree program with at least a credit average in the final year.

Descriptions: This subject, the aim of which is to enable students to competently research an area of study utilising knowledge and skills gained in previous studies, consists of a project carried out by students on an individual basis. The project is expected to be a scientific investigation of an approved topic, followed by the submission of a suitably formatted thesis in which the topic is introduced and formulated; the scientific investigation described in detail; results and conclusions from the study are elaborated; and an extended discussion presented. The research project will be undertaken in one of the research areas of the School and may, subject to approval, be undertaken at an external location.

Credit Points: 24

Learning Outcomes: To be advised.

Class Contact: An average of 15 hours per week for one semester

Required Reading: To be advised by supervisor.

Assessment: The assessment will consist of an oral presentation and submission of a thesis.

**RCS5100 RESEARCH METHODOLOGY**

Locations: Footscray Park,

Pre-requisites: Nil.

Descriptions: Experimental design, statistics in research, data analysis, computer applications and software, literature analysis and critical appraisal, ethics in research, scientific writing and data presentation. Qualitative data analysis.

Credit Points: 12

Learning Outcomes: To be advised.

Class Contact: one hour/week x 26 weeks3 hours per week for one semester-lectures and computer labs.

Required Reading: To be advised by lecturer.

Assessment: Continuous assessment by assignments only.
RCS5111 PRINCIPLES OF ENVIRONMENTAL SCIENCE AND MANAGEMENT

Locations: Footscray Park,
Pre-requisites: Nil.
Credit Points: 12
Learning Outcomes: To be advised.
Class Contact: Three hours of lectures per week for one semester.
Required Reading: There are no standard textbooks for this subject. Reading to be advised by the lecturer.
Assessment: Assessment will be by four assignments (4 x 10% = 40%) and one end of semester exam (60%). Each assignment has a 1,000 word limit (no more than 10 pages) and may be supplemented with an appropriate number of figures, charts and/or tables. Assignments and assignment deadlines will be spread evenly across the semester. There are no special conditions for exams.

RCS5121 ENVIRONMENTAL LAW AND STANDARDS 1

Locations: Footscray Park,
Pre-requisites: Nil.
Credit Points: 12
Learning Outcomes: To be advised
Class Contact: Three hours of lectures per week for one semester.
Assessment: Continuous assessment by assignments, presentations and reports.

RCS5131 WATER POLLUTION MONITORING & LIQUID WASTE MANAGEMENT

Locations: Footscray Park,
Pre-requisites: Nil.
Credit Points: 12
Learning Outcomes: To be advised.
Class Contact: Three hours of lectures per week for one semester.
Required Reading: There are no standard textbooks for this subject. Reading to be advised by the lecturer.
Assessment: Assessment will be by four assignments (4 x 10% = 40%) and one end of semester exam (60%). Each assignment has a 1,000 word limit (no more than 10 pages) and may be supplemented with an appropriate number of figures, charts and/or tables. Assignments and assignment deadlines will be spread evenly across the semester. There are no special conditions for exams.

RCS5132 ENVIRONMENTAL LAW AND STANDARDS 2

Locations: Footscray Park,
Pre-requisites: Nil.
Credit Points: 12
Learning Outcomes: To be advised.
Class Contact: Three hours of lectures per week for one semester.
Assessment: Continuous assessment by assignments, presentations and reports.

RCS5141 AIR QUALITY MANAGEMENT

Locations: Footscray Park,
Pre-requisites: Nil.
Credit Points: 12
Learning Outcomes: To be advised.
Class Contact: Three hours of lectures or computer labs per week for one semester.
Required Reading: To be advised by lecturer.
Assessment: Assignments, 40%; examination, 60%.

RCS5192 CLEANER PRODUCTION TECHNOLOGY AND WASTE MINIMISATION

Locations: Footscray Park,
Pre-requisites: Nil.
FACULTY OF HEALTH, ENGINEERING AND SCIENCE

Credit Points: 12

Learning Outcomes: To be advised.

Class Contact: Three hours per week for one semester, consisting of lectures and site visits.

Required Reading: To be advised by lecturer.

Assessment: Assignment and site visit reports, 40%; examination, 60%.

RCS6000 PROJECT

Locations: Footscray Park,

Pre-requisites: Nil. Normally requires completion of one full year of coursework equivalent to the Graduate Diploma in Environmental Management. In some circumstances a limited number of coursework subjects may be taken concurrently with the project.

Descriptions: A program of approved research and enquiry into an area related to environmental management. The project may be conducted on or off campus and may involve an industry partner.

Credit Points: 48

Learning Outcomes: To be advised.

Class Contact: 150 hrs of research activity over the course of the program.

Required Reading: To be advised by project supervisor(s)

Assessment: By examination of a completed project report, normally in the range of 12,000 to 20,000 words.

RCS8001 RESEARCH THESIS 1 FULL TIME

Locations: To be advised.

Pre-requisites: To be advised.

Descriptions: This unit of study is part of a research degree program. Information on research topics for the Faculty of Health, Engineering and Science may be found on the faculty website at the following link: http://www.vu.edu.au/Faculties/HealthEngineeringandScience/ResearchandResearchTraining/MajorResearchAreas/

Assessment criteria and Core Research Graduate Attributes can be found on the Office for Postgraduate Research website at the following link: http://www.vu.edu.au/Research/OfficeforPostgraduateResearch/PoliciesProcessesandGuidelines/

Credit Points: 48

Learning Outcomes: To be advised.

Class Contact: To be advised.

Required Reading: To be advised.

Assessment: To be advised.

RCS8002 RESEARCH THESIS 2 FULL TIME

Locations: To be advised.

Pre-requisites: To be advised.

Descriptions: This unit of study is part of a research degree program. Information on research topics for the Faculty of Health, Engineering and Science may be found on the faculty website at the following link: http://www.vu.edu.au/Faculties/HealthEngineeringandScience/ResearchandResearchTraining/MajorResearchAreas/

Assessment criteria and Core Research Graduate Attributes can be found on the Office for Postgraduate Research website at the following link: http://www.vu.edu.au/Research/OfficeforPostgraduateResearch/PoliciesProcessesandGuidelines/

Credit Points: 48

RCS8011 RESEARCH THESIS 1 PART TIME

Locations: To be advised.

Pre-requisites: To be advised.

Descriptions: This unit of study is part of a research degree program. Information on research topics for the Faculty of Health, Engineering and Science may be found on the faculty website at the following link: http://www.vu.edu.au/Faculties/HealthEngineeringandScience/ResearchandResearchTraining/MajorResearchAreas/

Assessment criteria and Core Research Graduate Attributes can be found on the Office for Postgraduate Research website at the following link: http://www.vu.edu.au/Research/OfficeforPostgraduateResearch/PoliciesProcessesandGuidelines/

Credit Points: 24

Learning Outcomes: To be advised.

Class Contact: To be advised.

Required Reading: To be advised.

Assessment: To be advised.

RCS8012 RESEARCH THESIS 2 PART TIME

Locations: To be advised.

Pre-requisites: To be advised.

Descriptions: This unit of study is part of a research degree program. Information on research topics for the Faculty of Health, Engineering and Science may be found on the faculty website at the following link: http://www.vu.edu.au/Faculties/HealthEngineeringandScience/ResearchandResearchTraining/MajorResearchAreas/

Assessment criteria and Core Research Graduate Attributes can be found on the Office for Postgraduate Research website at the following link: http://www.vu.edu.au/Research/OfficeforPostgraduateResearch/PoliciesProcessesandGuidelines/

Credit Points: 24

Learning Outcomes: To be advised.

Class Contact: To be advised.

Required Reading: To be advised.

Assessment: To be advised.

REP1001 ENGINEERING PHYSICS 1A

Locations: Footscray Park,

Pre-requisites: Nil.

Descriptions: Physical Units and Dimensions: Physical quantities, system of units and standards, dimensions, unit conversion, significant figures. Mechanics: Scalars and vectors, displacement, velocity and acceleration, motion in one and two dimensions, force, Newton’s laws of motion, friction, work and energy, conservation laws. Momentum and conservation laws, impulse and collisions, rotational motion, moments of inertia, centre of mass, torque, angular momentum, statics Wave Motion & Optics: SHM, damped harmonic motion, forced oscillations and resonance, oscillatory motion, mechanical and acoustic waves, superposition and standing waves, electromagnetic waves, reflection and refraction of light, mirrors and lenses, wave optics, thin films, polarization. Fluids: Density, pressure, Pascal’s law, equation of continuity, Bernouilli’s equation.
Credit Points: 12

Learning Outcomes: To be advised.

Class Contact: Students will be required to use the text book (required reading) extensively.


Assessment: Class tests conducted throughout the semester (5 x 4% tests), 20%; Laboratory performance (5 x 4% laboratories during the semester), 20%; End of semester examination 60%.

REP1002 ENGINEERING PHYSICS 1B

Locations: Footscray Park,

Pre-requisites: EPP1001 Engineering Physics 1A or equivalent. Students without formal academic qualifications in physics but with significant relevant experience may be considered for direct entry into this subject.


Credit Points: 12

Learning Outcomes: Upon successful completion of this unit students will be able:

• to identify the key elements in a previously unseen problem associated with the content area of this subject to locate the relevant underpinning theory in references available to them

• to use that support and appropriate mathematical techniques to apply that information to the novel situation to reach a solution to the problem posed.

Class Contact: 60 hours per semester comprising 48 hours of lectures/tutorial and 12 hours of laboratory


Assessment: Class tests conducted throughout the semester, 20%; Laboratory performance (5 x 4% laboratories during the semester), 20%; End of semester examination 60%.

REP1003 ENGINEERING PHYSICS 1C

Locations: Footscray Park,

Pre-requisites: REP1001 Engineering Physics 1A or equivalent. Students without formal academic qualifications in physics but with significant relevant experience may be considered for direct entry into this subject.

Descriptions: A selection of topics taken from the following: Classical Mechanics; Thermodynamics; Electromagnetism; Optics; Quantum Mechanics; Nuclear Physics; Relativity; High Energy Physics; Electrical and Electronic Machines. Advanced studies which extend the material covered in first year subjects.

Credit Points: 12

Learning Outcomes: To be advised.

Class Contact: To be advised.


Assessment: Class tests conducted throughout the semester (5 x 4% tests), 20%; Laboratory performance (5 x 4% laboratories during the semester), 20%; End of semester examination 60%.

REP4100 DATA ACQUISITION

Locations: Footscray Park,


Descriptions: Experimental data handling: measurements and errors. Types of errors, combining errors. Graphical analysis, statistical distributions. Sensors and transducers: Transducer types, e.g. resistive, voltage, current, capacitive, inductive. Transducer circuits such as bridges and operational amplifiers. Generalised measurement systems. Computer laboratory interfacing: Analogue to digital conversion: Data acquisition, time varying signals and the sampling theorem. Digital to analogue conversion: Generation of DC and AC voltages. Adaptive computer control: Digital input and output. General Purpose Interface Bus (GPIB); description and overview. Graphical programming: Fundamentals of a graphical programming environment for the creation of a virtual instrument, e.g. LabVIEW. Projects: Students will be assigned projects that will involve the automation of an experiment, both in terms of the hardware and software requirements.

Credit Points: 12

Learning Outcomes: On successful completion of this unit, students are expected to be able to have a sound grasp of experimental measurement and error handling techniques; to be able to use a variety of transducers in appropriate circuits for measurement of physical parameters; to be able to automate a simple experiment using a graphical programming environment.

Class Contact: 48 hours per semester of lecture/tutorial/laboratory sessions.


Assessment: Assignments 20%; End of semester examination 40%; Project and laboratory reports 40%.

REP4200 DIRECTED STUDIES IN PHYSICS 2

Locations: Footscray Park,

Pre-requisites: Satisfactory completion of a first year physics sequence of at least two semester's duration.

Descriptions: A selection of topics from the following: Classical Mechanics; Thermodynamics; Electromagnetism; Optics; Quantum Mechanics; Nuclear Physics; Relativity; High Energy Physics; Electrical and Electronic Machines. Advanced studies which extend the material covered in first year subjects.

Credit Points: 12

Learning Outcomes: To be advised.

Class Contact: 60 hours per semester of lecture/tutorial/seminar/laboratory sessions.
Required Reading: No text will be prescribed. Students will be expected to read widely around the topics in the subject.

Assessment: A series of regular group assignments and tests will be negotiated for each individual student or group of students with a similar background. The assessment regime will be equivalent to that for a second year physics subject in a technological degree in the content areas covered by this subject whilst recognising the differing backgrounds of the students undertaking the subject - especially in mathematics.

RMA1001 ENGINEERING MATHEMATICS 1A

Locations: Werribee, Footscray Park,

Pre-requisites: Year 12 mathematics or its equivalent

Descriptions: Basic algebra, including index, log laws, indical and log equations, algebraic expansions; Functions, straight line, parabola, circle etc. Mod function. Domain, range, inverse functions; Trig. Functions and their graphs, period amplitude, degrees radians. Basic trig identities, Inverse Trig functions. Converting aCosx+bSinx to single Sin, Cosine terms; Limits, continuity, differentiation, rules, higher derivatives, Implicit differentiation. Tangents and Normals; Parametric differentiation, derivatives of logs and exponentials. Rules. Of rate of change, maximum and minimum problems. Trig and inverse trig derivatives, logarithmic differentiation; Introduction to integration. Fundamental theorem of Integral Calculus. Substitution rule. Areas, Mean values, Root mean square; Methods of integration, partial fractions, simple integration by parts; Introduction to differential equations, separation of variables, population growth, air resistance; Complex numbers; Vectors.

Credit Points: 12

Learning Outcomes: To be advised.

Class Contact: 60 hours of lectures/tutorials per semester.


Assessment: There will be class tests, worth 30% and an end of semester examination worth 70%. No word length limit applies

RMA1002 ENGINEERING MATHEMATICS 1B

Locations: Footscray Park,

Pre-requisites: RMA1001 - ENGINEERING MATHEMATICS 1A


Credit Points: 12

Learning Outcomes: To be advised.

Class Contact: Four hours per week for two semesters based on two hour lectures and two hour tutorial sessions.

Required Reading: To be advised by lecturer.

Assessment: Tests and assignments, 40%; one three-hour examination at the end of each semester, 60%. A satisfactory level of assessment for each component is required for a subject pass.

RMA1110 MATHEMATICS FOR THE BIOLOGICAL AND CHEMICAL SCIENCES 1

Locations: Werribee, St. Albans

Pre-requisites: One of the Year 12 mathematics subjects

Descriptions: Revision of basic algebra and logarithms. Discussion of units, accuracy, precision and significant figures in experimental work. An introduction to matrices
and matrix manipulation. Functions and graphs. Solutions of polynomial equations and the general concept of an equation and its solution. Introduction to the methods and applications of differential calculus - local and global max/min. Fitting functions to points and the method of least squares.

Credit Points: 12
Learning Outcomes: To be advised.
Class Contact: Four hours per week for one semester consisting of one hour lecture and three hours of practice classes.
Assessment: Test 1 (week 3), 15%; Test 2 (week 10), 25%; Final Examination, 60%.

RMA1120 STATISTICS FOR THE BIOLOGICAL AND CHEMICAL SCIENCES 2
Locations: Werribee, St. Albans
Pre-requisites: One of the Year 12 mathematics subjects
Descriptions: Representing data graphically and standard summary statistics. Elementary notions of probability and random variable (discrete and continuous). The binomial and normal variables. Point and interval estimation and testing hypotheses on proportions, means and variances.
Credit Points: 12
Learning Outcomes: To be advised.
Class Contact: Four hours per week for one semester consisting of one hour lecture, one, two hour tutorial and one, one hour computer laboratory.
Assessment: Tutorial test (15%), computer test/assignment (15%) examination (70%).

RMA2120 MATHEMATICS FOR THE BIOLOGICAL AND CHEMICAL SCIENCES 2
Locations: Werribee,
Pre-requisites: RMA1110.
Credit Points: 12
Learning Outcomes: To be advised.
Class Contact: Four hours per week for one semester consisting of 1 hr lecture, 2 hrs tutorial and 1 hr tutorial/computer lab.
Required Reading: To be advised.
Assessment: Tutorial test (15%), Computer test (15%), Examination (70%)

RMA3071 INTRODUCTION TO COMPUTER UTILISATION
Locations: Werribee,
Pre-requisites: Nil
Descriptions: Web design, Hypertext Mark-up Language (HTML), C Program, Microsoft Excel.

Credit Points: 6
Learning Outcomes: To be advised.
Class Contact: Three hours per week for one semester, comprising one-hour lectures and two one-hour tutorial/lab.
Required Reading: To be advised.
Assessment: Final examination: 70%; Assignment/test: 30%.

RMA4001 ADVANCED MATHEMATICS FOR ELECTRICAL ENGINEERS
Locations: Footscray Park,
Pre-requisites: VEL2002 Linear Systems and Mathematics 2B.
Descriptions: A range of topics are to be selected from the following areas: (1) Numerical linear algebra, (2) Constraint and unconstraint optimization problems, (3) Iterative solutions of nonlinear algebraic equations and ordinary differential equations, (4) Mean square theory of random processes.
Credit Points: 12
Learning Outcomes: To be advised.
Class Contact: 60 hours of lecture/tutorial per semester.
Assessment: Mid-term test 40% Examination 60%.

RMS1000 BIOTECHNOLOGY PROFESSION
Locations: Werribee,
Pre-requisites: Nil
Descriptions: Context specific materials from the world of biotechnology will be used to develop the students’ awareness and understanding of the professional skills and duties that comprise professional practice. Practicing biotechnologists and other scientists will be invited to give presentations on their experiences in the profession. The ethics of biotechnology practice will be emphasised and students will be encouraged to give formal and impromptu presentations on biotechnology and society.
Credit Points: 12
Learning Outcomes: To be advised.
Class Contact: Four hours per week for one semester consisting of 2 x 2hr workshops per week.
Required Reading: Students will be asked to review a selection of papers from the literature.
Assessment: Assignment two x 1000 word (30%), Oral presentations x 2 (20%), Examination (50%).

RMS1272 BIOCHEMISTRY (OSTEOPATHY) 2
Locations: City Flinders, St Albans, Off Campus.
Pre-requisites: RMS1171 Biochemistry (Osteopathy) 1; or equivalent.
FACULTY OF HEALTH, ENGINEERING AND SCIENCE

Credit Points: 6

Learning Outcomes: On successful completion of this unit, it is expected that students will be able to:

- Describe biochemical events that occur in the human body;
- Explain the biochemical and pathological basis of metabolic diseases;
- Make cautious interpretations of test results, taking into account various factors that can affect the results;
- Correctly handle commonly used biochemical laboratory equipment, such as micropipettes, spectrophotometers, burettes, glassware, centrifuges;
- Critically analyse data obtained in experiments;
- Write formal laboratory reports in a conventional scientific manner;
- List principles of Good Laboratory Practice (GLP) and apply those principles in the laboratory at all times;
- Behave in a safety-conscious manner in a laboratory.

Class Contact: Three (3) hours per week or equivalent for one semester comprising tutorials and laboratory practicals. Practical sessions have a hurdle requirement of 100% attendance.


Assessment: Laboratory practical performance and reports (50%); one theory and practical skills examination (25%); clinical case study workshops (25%).

RMS3000 BIOPROCESSING TECHNOLOGY

Locations: Werribee,

Pre-requisites: RBF2300

Descriptions: Topics include the principles of biochemical engineering, process flow charts, material and energy balances, fluid statics and dynamics, bioreactor design, production and maintenance of commercial strains, scale up, downstream processing including harvesting, concentration and purification of bioproducts, sterilization.

Credit Points: 12

Learning Outcomes: To be advised.

Class Contact: 5 hours per week comprising 3 hours of lectures and 2 hours of laboratory work.


Assessment: Assignment (1 x 2000 words) 20%; Laboratory Reports (4 x reports), 30%; Exam (1 x three hrs), 50%.

RMS3010 BIOPROCESSING APPLICATIONS

Locations: Werribee,

Pre-requisites: Nil

Descriptions: Topics include enzyme production and applications, algal biotechnology, bioremediation, biobleaching of metals from low grade ore, commercial and domestic wastewater treatment, biomass conversion and microbial fuel production. The ethical issues associated with these topics will be discussed.

Credit Points: 12

Learning Outcomes: To be advised.

Class Contact: 5 hours per week comprising three hours of lectures and two hours of laboratory work.


Assessment: Assignment (1 x 2000 words), 20%; Laboratory Reports (4 x reports), 30%; Exam (1 x three hrs), 50%.

RMS3020 GENOMICS, PROTEOMICS AND BIOINFORMATICS

Locations: Werribee,

Pre-requisites: RBF2520 Biochemistry 1.

Descriptions: An overview and definitions of terms; the logic, scope and rationale of genomics and proteomics; descriptions of approaches used in genomics and proteomics; applications of bioinformatics including accessing internet resources such as GenBank and EMBL, data mining, and using programs such as BLAST and FASTA; examples of applications in a range of settings including forensics, drug design, medical research. The theory underpinning a range of analytical techniques used in nucleic acid and protein analysis will also be covered. Ethical issues concerning the ownership of and access to information in databanks will be covered.

Credit Points: 12

Learning Outcomes: To be advised.

Class Contact: 5 hours per week comprising three hours of lectures and two hours of laboratory work.


Assessment: Assignment (1 x 3000 words), 20%; Laboratory Reports (10 x reports), 30%; Exam (1 x three hrs), 50%.

RMS3030 GENETIC ENGINEERING

Locations: Werribee, St Albans,

Pre-requisites: RBF2520 Biochemistry 1; RBF2390 Molecular Genetics.

Descriptions: The unit will include gene cloning, PCR, restriction enzymes and their uses; site-directed mutagenesis; heterologous gene expression systems; DNA profiling and forensics; Southern and Northern Blotting; gene mapping; transgenics and gene knockouts; the Human Genome Project and gene therapy; recombinant DNA-based medical diagnostics; positional cloning; plant genetic engineering; and the ethics, risks and benefits of genetic engineering.

Credit Points: 12

Learning Outcomes: To be advised.

Class Contact: 5 hours per week comprising three hours of lectures and two hours of laboratory work.


Assessment: Assignment 20%; Laboratory Reports (4 x reports), 25%; Exam (1 x three hrs), 55%.

RMS3040 PROJECT 1 - BIOTECHNOLOGY

Locations: Werribee,

Pre-requisites: Students would normally be expected to have completed all Year 1 and 2 subjects.
Descriptions: This unit covers project methodology, experimental and analytical design, and research plan preparation. A project will be selected by the student in consultation with academic staff and will, as far as is possible, address a genuine research issue related to Biotechnology.

Credit Points: 12

Learning Outcomes: To be advised.

Class Contact: 6 hours per week comprising laboratory work and workshops.

Required Reading: Third Year Project Study Guide, 2006, Victoria University; Students will be required to review from the current literature a selection of papers related to their chosen topic.

Assessment: 6 hours per week comprising laboratory work and workshops.

RMS3045 PROJECT 2 - BIOTECHNOLOGY

Locations: Werribee,

Pre-requisites: Students would normally be expected to have completed Project 1-Biotechnology.

Descriptions: This unit covers project methodology, experimental and analytical design, research plan preparation, analysis of results and thesis writing. A project will normally have been selected by the student in consultation with academic staff in the prerequisite subject, Project 1-Biotechnology.

Credit Points: 12

Learning Outcomes: To be advised.

Class Contact: 6 hours per week comprising laboratory work and workshops.

Required Reading: Third Year Project Study Guide, 2006, Victoria University; Students will be required to review from the current literature a selection of papers related to their chosen topic.

Assessment: 6 hours per week comprising laboratory work and workshops.

RMS3050 ADVANCED MEDICAL MICROBIOLOGY

Locations: Werribee,

Pre-requisites: RBF2310 Microbiology 2 or equivalent.

Descriptions: This unit focuses on the molecular aspects of microbial pathogenesis and highlights the principal intervention strategies used to treat infectious diseases. The emphasis will be on the relationship between a pathogen (bacteria, viruses and protozoa) and its human host. An in-depth review of the life cycles of several organisms will inform discussion of the current research in the areas of pathogenesis, genetic and phenotypic variation in pathogens and the implications for treatment and control strategies. Consideration will be given to the ethical issues relating to eg. stem cells, will be discussed.

Credit Points: 12

Learning Outcomes: To be advised.

Class Contact: Three hours per week comprising lectures and tutorials.

Required Reading: To be advised by the lecturer.

Assessment: Assignment (1 x 3000 words), 40%; Exam (1 x three hrs), 60%.

RMS3060 MICROBIAL TECHNOLOGY AND CELL CULTURE

Locations: Werribee,

Pre-requisites: RBF2300 Microbiology 1 or equivalent.

Descriptions: Topics include batch, fed-batch and continuous culture, bioreactors and their various modes of operation, plant cell culture and animal cell culture. Topical issues related to the ethics associated with the source and use of various cell lines eg. stem cells, will be discussed.

Credit Points: 6

Learning Outcomes: To be advised.

Class Contact: Three hours per week, comprising lectures and practical work in alternating weeks.


Assessment: Laboratory Reports (3 x reports), 40%; Exam (1 x two hrs), 60%.

RMS3113 COMPARATIVE IMMUNOBIOLOGY

Locations: Werribee,

Pre-requisites: RBF2520 · BIOCHEMISTRY 1

Descriptions: This unit of study examines strategies of disease resistance and internal defence in prokaryotes and eukaryotes and their importance in the field of biotechnology. The specific aims of this unit of study are: to develop an understanding of the nature of immunity and resistance; to develop an understanding of the mechanisms underlying internal defence in organisms; to develop an understanding of the evolution of defence mechanisms in prokaryotes and eukaryotes. Topics covered include: the molecular and cellular components of the vertebrate immune system; innate and adaptive responses to pathogens; the evolution of metazoan immunity; the restriction modification system and other defence mechanisms of prokaryotes; hypersensitive response and systemic acquired resistance in plants; immunology-related advances in biotechnology.

Credit Points: 12

Learning Outcomes: On successful completion of this unit, students are expected to be able to:

• describe the adaptive and innate immune response to pathogens in vertebrates;
• compare and contrast strategies of defence against pathogens in prokaryotes and eukaryotes;
• recall key evolutionary events leading to the development of the immune response;
• perform several immunology-based laboratory techniques including the ELISA assay, Western Blot and Immunodiffusion assay;
• apply this knowledge in areas of biotechnology.

Class Contact: 72 hours per semester, comprising lectures, laboratory classes and tutorials.


Assessment: Assignment (20%): Students will submit a written assignment on a topic related to the unit of study. Students will be required to locate, evaluate and synthesise information from a variety of sources, including the scientific literature. It is expected that the assignment will be within a word range of 2000 - 2500 words.
Main core graduate attributes: I3, W3, A3 Practical classes (30%): Students will attend 8 practical classes and submit laboratory reports. Practical classes will require students to work co-operatively and independently and to interpret the results of immunology-based laboratory techniques. Main core graduate attributes: P3, C3, A3 Written examination (50%): Students are required to pass a written examination of 3 hours duration. Main core graduate attributes: P3, W3, A3
RMS5100 ENVIRONMENTAL IMPACT ASSESSMENT FOR ECOLOGISTS

Locations: Werribee,

Pre-requisites: To be advised.

Descriptions: This unit introduces environmental impact assessment and its importance in ecologically sustainable development. Its specific aim is to develop the knowledge and skills required to design and undertake an EIA. The unit begins with an overview of the principles and practices of EIA, especially those involving ecological studies, and a survey of the relevant Commonwealth and state legislation. Topics covered include the elements of the EIA process; communication with stakeholders; protocols for baseline studies; impact predictions under differing scenarios; impact mitigation; the importance of continued monitoring; and an introduction to the emerging field of strategic environmental assessment (SEA).

Credit Points: 12

Learning Outcomes: On successful completion of this unit, students are expected to be able to:

• identify key issues in environmental impact assessment
• locate and interpret relevant legislation
• use databases to gather relevant ecological information
• develop a plan for conducting the ecological component of an EIA on a nominated area
• locate, appraise and synthesise relevant literature
• prepare a report in an appropriate style
• communicate with a range of stakeholders.

Class Contact: 36 hours for one semester comprising 24 hours of lectures and 12 hours of workshops.


Assessment: Written assignment 1 (30%) 2,000 2,500 words. Written assignment 2 (30%) 2,000 2,500 words. Written report (40%) 3,500 4,000 words. Students must attain a minimum mark of 50% in each assessable component to pass this unit of study.

RMS5101 ENVIRONMENTAL MANAGEMENT AS A PROFESSION

Locations: Werribee,

Pre-requisites: To be advised.

Descriptions: This unit introduces students to the professional practice of environmental management. Its specific aim is to develop an understanding of the role of the environmental manager in industry and the wider community. It covers ethics and responsibilities; types of employment for environmental managers; outsourcing and specialization; managing uncertainty and risks; interpreting consultancy briefs; tendering for consultancy opportunities; and preparing reports for varying audiences.

Credit Points: 12

Learning Outcomes: On successful completion of this unit, students are expected to be able to:

• demonstrate familiarity with the range of employment opportunities for environmental managers
• prepare a brief for an EIA
• prepare a tender document
• prepare a report for a target audience

Class Contact: 36 hours for one semester comprising 27 hours of lectures and 9 hours of workshops.

Required Reading: School of Molecular Sciences. (2008) RMS5101 Class Notes. Victoria University.

Assessment: Written assignment (25%) 2,000 2,500 words. Written assignment (25%) 2,000 2,500 words. Written report (50%) 4,500 5,000 words. Students must attain a minimum mark of 50% in each assessable component to pass this unit of study.

RMS5102 TERRESTRIAL ECOLOGY

Locations: Werribee,

Pre-requisites: To be advised.

Descriptions: This unit examines the biodiversity and ecological processes of terrestrial systems ranging from deserts to rainforests, with an emphasis on vegetation types that are particularly vulnerable to human-induced change. Its specific aim is to develop an understanding of the biotic and abiotic components of terrestrial ecosystems and their interactions at all levels. It covers the influence of geology and soils on vegetation; solar radiation and the water cycle; primary productivity; nutrient cycles; disturbance and succession; resilience and stability in major ecosystems; and the application of ecology to management issues.

Credit Points: 12

Learning Outcomes: On successful completion of this unit, students are expected to be able to:

• recognise major groups of eukaryotic organisms from terrestrial ecosystems
• describe the major abiotic and biotic characteristics of different types of terrestrial ecosystems
• identify key problems affecting terrestrial ecosystems
• locate, appraise and synthesise relevant literature

Class Contact: 36 hours for one semester comprising 24 hours of lectures and 12 hours of workshops.


Assessment: Essay (25%) 2,000 2,500 words. Field trip report (25%) 2,000 2,500 words. Examination (50%) Students must attain a minimum mark of 50% in each assessable component to pass this unit of study.

RMS5103 AQUATIC ECOLOGY

Locations: Werribee,

Pre-requisites: To be advised.

Descriptions: This unit examines the biodiversity and ecological processes of aquatic habitats from upland rivers to the ocean. In focussing on lowland and coastal water systems, the unit emphasises those environments that are likely to suffer the greatest impact from human activity. Its specific aim is to develop an understanding of the biotic and abiotic components of aquatic ecosystems and their interactions at all levels. Topics covered include the systematics and biology of aquatic organisms; characteristics of marine, estuarine and freshwater habitats; water chemistry; primary productivity; fisheries; pollution; natural and human-induced disturbance and recovery; conservation, including marine protected areas; invasive species; and climate change.

Credit Points: 12

Learning Outcomes: On successful completion of this unit, students are expected to be able to:

• recognise major groups of eukaryotic organisms from aquatic ecosystems
• describe the major abiotic and biotic characteristics of different types of aquatic ecosystems
• identify key problems affecting aquatic ecosystems
• locate, appraise and synthesise relevant literature

Class Contact: 36 hours for one semester comprising 21 hours of lectures and 15 hours of field trips.


Assessment: Essay (25%) 2,000 2,500 words. Field trip report (25%) 2,000 2,500 words. Written examination (50%) Students must attain a minimum mark of 50% in each assessable component to pass this unit of study.

RMS5110 MOLECULAR GENETICS THEORY

Locations: Werribee,
Pre-requisites: Nil.

Descriptions: This unit will cover principles of and developments in molecular biology, gene structure and function, and molecular genetics. The theoretical component will include topics such as prokaryotic and eukaryotic genome structure, multigene families, genomic rearrangements including transposable elements, methylation and imprinting of DNA and repair mechanisms. The subject will also cover theoretical aspects of genetic engineering or recombinant DNA technology such as plasmid biology, cloning vectors and recombinant cloning strategies, and ethical concerns related to these technologies.

Credit Points: 12

Learning Outcomes: To be advised.

Class Contact: Three hours of class contact time per week consisting of lectures and tutorials.


Assessment: One assignment (3000 words, 50%); tests (5x15 min, 10%) and final examination (3 h, 40%).

RMS5120 APPLIED GENETIC ENGINEERING

Locations: Werribee,
Pre-requisites: or Co-requisite RMS5110 Molecular Genetics Theory.

Descriptions: This unit will cover practical aspects of molecular genetics and recombinant DNA technology. This will include more practical aspects of topics covered in Molecular Genetics Theory such as plasmid biology, cloning vectors and recombinant cloning strategies, Northern and Southern blotting, PCR and DNA sequencing. Applications of these techniques in plant, animal biotechnology and in human applications will be discussed.

Credit Points: 12

Learning Outcomes: To be advised.

Class Contact: Three hours per week practicals or workshops for one semester.


Assessment: Practical work (70%); One assignment (3000 words, 30%).

RMS5130 FUNCTIONAL GENOMICS & BIOINFORMATICS THEORY

Locations: Werribee,
Pre-requisites: or Corequisite Molecular Genetics Theory (RMS5110)

Descriptions: Topics covered include genome and proteome analysis, expression analyses such as microarrays, proteome analysis such as 2-D electrophoresis, MALDI-TOF and ESI analysis. The bioinformatics section will cover sequence analysis using worldwide databases such as GenBank, EMBL and KEGG. It will examine how the databases have been organized, what they contain and programs available to analyse the data from them. Programs used for sequence similarity searching, alignment of sequences, in silico PCR primer design, translation and finding of protein motifs will be examined.

Credit Points: 12

Learning Outcomes: To be advised.

Class Contact: 36 hours (3 hours lectures/workshops per week)


Assessment: One written assignment (3000 words, 30%); tests (1x1h, 20%) and final examination (3 h, 50%).

RMS5135 FUNCTIONAL GENOMICS & BIOINFORMATICS APPLICATIONS

Locations: Werribee,
Pre-requisites: RMS5110 - MOLECULAR GENETICS THEORY

Descriptions: This unit will complement the theoretical subject, Functional Genomics and Bioinformatics Theory (which is a pre- or co-requisite for this subject). It will consist of hands-on practicals or workshops using data generated from genome and proteome analysis experiments. The computer laboratory exercises will include analysis of gene array data, sequence database searching using data mining tools such as BLAST and FASTA, as well as analysis tools such as ORF finder, Flip-Six- Frames, BestFit and ClustalW and PCR-Prime. Structure-function relationships will also be examined in selected proteins from the PDB database, and using programs such as Rasmol, Chimera and Protein Explorer.

Credit Points: 12

Learning Outcomes: To be advised.

Class Contact: 36 hours


Assessment: Practical exercises and reports (70%); assignment (3000 words, 30%).

RMS5140 BIOPROCESSING TECHNOLOGY PRINCIPLES

Locations: Werribee,
Pre-requisites: Nil.

Descriptions: Principles of biochemical engineering, material and energy balance, fermentation technologies, bioreactor design and applications, harvesting and purification of bioproducts, filtration systems and commercial-scale applications of biological-based systems.

Credit Points: 12

Learning Outcomes: To be advised.

Class Contact: Three hours per week of lectures/tutorials.


Assessment: One assignments (3000 words, 30%); examination (3h, 70%).
RMS5145 BIOPROCESSING TECHNOLOGY APPLICATIONS
Locations: Werribee,
Pre-requisites: RMS5140 - BIOPROCESSING TECHNOLOGY PRINCIPLES
Descriptions: Laboratory-scale experiments will be conducted that train students in the areas of downstream processing, plant and algal products, heat-exchange, fermentation, fluid flow, enzyme engineering, biomass conversion and sustainable energy systems.
Credit Points: 12
Learning Outcomes: To be advised.
Class Contact: Three hours per week of laboratory practicals.
Assessment: Laboratory reports (100%).

RMS5150 ETHICS AND REGULATORY AFFAIRS IN BIOTECHNOLOGY
Locations: Werribee,
Pre-requisites: Nil.
Descriptions: This unit will examine social and technical issues in biotechnology from an ethical viewpoint. Environmental and human impacts of genetic engineering will be discussed. The obligations to patients and the community will be described in the regulations governing manufacture and clinical trials of new drugs. Comparisons will be made between drugs and devices, human and veterinary products, and different national systems.
Credit Points: 12
Learning Outcomes: To be advised.
Class Contact: Three hours lectures per week for one semester.
Assessment: One assignment (3000 words, 50%); final examination (3h, 50%).

RMS5160 INTELLECTUAL PROPERTY AND COMMERCIALISATION IN BIOTECHNOLOGY
Locations: Werribee,
Pre-requisites: Nil.
Descriptions: This unit of study will examine the need for patent protection, patent procedures in Australia, the USA and Europe, and methods of patent searching. Laboratory practices needed in protecting discoveries will be described, as well as the defence of intellectual property (IP) rights. The various options for commercial development will be compared, including licensing, partnerships, and start-up companies. The problems of raising finance will be demonstrated with the preparation of a business plan. Case studies will be used to illustrate both IP and commercialisation issues, and all students will prepare a business plan for a biotechnology product.
Credit Points: 12
Learning Outcomes: To be advised.
Class Contact: Three hours per week lectures/tutorials for one semester.
Assessment: One assignment (3000 words, 50%); final examination (3h, 50%).

RMS5200 ENVIRONMENTAL MANAGEMENT IN A CHANGING WORLD
Locations: Werribee,
Pre-requisites: To be advised.
Descriptions: This unit explores the potential impacts of climate change, including drought and sea level change, and of increasing population density in vulnerable areas. It specific aim is to develop the knowledge and skills required to manage the environment in the face of large scale changes. It covers natural and anthropogenic climate change; methods of assessing, monitoring and interpreting climate data; Australian and international agreements; changes in human geography; impacts on natural ecosystems; impacts on human populations; mitigation politics; and informed decision-making processes.
Credit Points: 12
Learning Outcomes: On successful completion of this unit, students are expected to be able to:
- identify the potential impacts of climate change on different locations
- recognise the major causes of anthropogenic climate change
- interpret basic climate data
- use computer programs to explore human geography
- identify the potential impacts of changing populations
Class Contact: 36 hours for one semester comprising 18 hours of lectures and 18 hours of workshops.
Assessment: Case studies (30%); Written exam (70%); Students must attain a minimum mark of 50% in each assessable component to pass this unit of study.

RMS5201 LANDSCAPE SCALE RESTORATION
Locations: Werribee,
Pre-requisites: RMS5102 - TERRESTRIAL ECOLOGY
Descriptions: This unit builds on knowledge and skills developed in RMS5102 Terrestrial Ecology and introduces students to the principles and practices of landscape scale rehabilitation in degraded environments, with special emphasis on mine sites and agricultural land. Its specific aim is to develop an understanding of the mechanisms of terrestrial restoration and the way in which they interact. It covers the assessment of rehabilitation sites, including sites affected by salinity, acid sulphate soils and toxic waste; planning and implementation of revegetation programs; importance of animals in rehabilitation; habitat connectivity; sites affected by salt and acid sulphate scal; rednation of land for public amenity; monitoring and management
Credit Points: 12
Learning Outcomes: On successful completion of this unit, students are expected to be able to:
- identify key issues affecting different types of degraded lands
- assess problems affecting a nominated site
- develop a basic rehabilitation plan for a nominated site
- evaluate alternative proposals for restoration of a nominated site.
Class Contact: 36 hours for one semester comprising 21 hours of lectures and 15 hours of field trips.
Written proposal (30%) 3,000 3,500 words. Written report (55%) 4,000 4,500 words. Students must attain a minimum mark of 50% in each assessable component to pass this unit of study.

RMS5202 AQUATIC SYSTEMS MANAGEMENT

Locations: Werribee,

Pre-requisites: RMS5103 - AQUATIC ECOLOGY

Descriptions: This unit builds on knowledge and skills developed in RMS5XXX Marine and Freshwater Ecology and introduces students to the principles and practices of aquatic resource management. Its specific aim is to develop an understanding of the mechanisms of aquatic management and the way in which they interact. It covers assessment of freshwater, marine and estuarine ecosystems, including salt lakes, mangroves and salt marshes; hydrology; the impact of irrigation and altered water flow; pollution and eutrophication; rehabilitation of water bodies; microbial indicators; and monitoring techniques in the field and laboratory.

Credit Points: 12

Learning Outcomes: On successful completion of this unit, students are expected to be able to:

- identify microbial and eukaryotic bioindicators
- identify key issues affecting different types of degraded water bodies
- develop a basic restoration plan for a nominated water body
- design a monitoring program for a nominated water body

Class Contact: 36 hours for one semester comprising 21 hours of lectures and 15 hours of field trips.


Assessment: Written proposal (30%) 3,000 3,500 words. Written report (55%) 4,000 4,500 words. Students must attain a minimum mark of 50% in each assessable component to pass this unit of study.

RMS6100 BIODIVERSITY ASSESSMENT

Locations: Werribee,

Pre-requisites: RMS5102 - TERRESTRIAL ECOLOGY

Descriptions: This unit introduces students to the theory and practice of assessing biodiversity in aquatic and terrestrial habitats. Its specific aim is to develop the knowledge and skills to plan and undertake biodiversity assessments. Topics covered include alpha, beta and gamma biodiversity; introduction to the major groups of plants and animals; techniques of assessing biodiversity at a site; vegetation mapping; rapid biodiversity assessment; use of surrogate species; introduction to bioinformatics, including DNA barcoding; and reference collections.

Credit Points: 12

Learning Outcomes: On successful completion of this unit, students are expected to be able to:

- identify major groups of plants and animals
- design an assessment plan for a nominated location
- map vegetation at a nominated site
- select species to act as biodiversity surrogates
- apply suitable sampling techniques to different taxa and habitats
- build a reference collection

Class Contact: 36 hours for one semester comprising 12 hours of lectures, 12 hours of field trips and 12 hours of workshops.

Required Reading: School of Molecular Sciences. (2008) Class notes in Biodiversity Assessment.

Assessment: Workshop reports (50%) 3,000 3,500 words. Field report (50%) 3,000 3,500 words. Students must attain a minimum mark of 50% in each assessable component to pass this unit of study.

RMS6102 ENVIRONMENTAL TOXICOLOGY

Locations: Werribee,

Pre-requisites: RMS5102 - TERRESTRIAL ECOLOGY

Descriptions: This unit covers the most frequently encountered environmental contaminants, including pesticides and heavy metals. Its specific aim is to develop knowledge and skills required to recognise and reduce the effects of contaminants in ecosystems. It examines methods of detection and quantification of contaminants, including biomarkers and bioindicators; the effects of contaminants on terrestrial and aquatic biota; bioaccumulation; risk and public perception; techniques for amelioration and rehabilitation. The unit includes case studies from Australia and overseas.

Credit Points: 12

Learning Outcomes: On successful completion of this unit, students are expected to be able to:

- list the major environmental contaminants and their effects on biota
- undertake basic laboratory analysis in toxicology
- identify major bioindicator species
- design an environmental monitoring plan for a nominated site
Class Contact: 36 hours for one semester comprising 18 hours of lectures, 12 hours of laboratory classes and 6 hours of field trips.


Assessment: Laboratory reports (40%) 1,000 1,500 words. Monitoring plan (60%) 5,000 5,500 words. Students must attain a minimum mark of 50% in each assessable component to pass this unit of study.

RMS6103 ECOLOGY OF INVASIVE SPECIES

Locations: Werribee.

Pre-requisites: RMS5102 - TERRESTRIAL ECOLOGY

Descriptions: The unit examines the characteristics and environmental and economic impacts of invasive species of plants and animals. Its specific aim is to develop the skills to recognise invasive species, predict their potential distribution and undertake programs to control their spread. It covers the biological characteristics of invasive vs non-invasive species; impact on natural ecosystems and agribusiness; sources of invasive species; mechanisms of entry into the country; methods of detection; data collection on invasive species; modelling the spread of invasive species under current conditions and under climate change scenarios; and mechanisms of control.

Credit Points: 12

Learning Outcomes: On successful completion of this unit, students are expected to be able to:

• describe the processes of invasion by exotic species
• identify key characteristics that contribute to a species ability to become invasive
• collect and analyse distributional data on an invasive species
• model the potential spread of a species using dedicated computer programs
• communicate complex ideas to a target audience

Class Contact: 36 hours for one semester comprising 18 hours of lectures, 12 hours of workshops and 6 hours of field work.


Assessment: Case study (40%) 3,500 4,000 words. Written examination (60%) 5,000 5,500 words. Students must attain a minimum mark of 50% in each assessable component to pass this unit of study.

RMS6130 BIOINFORMATICS I

Locations: Werribee.

Pre-requisites: or Corequisite(s) Molecular Genetics Theory (RMS5110), Principles of Genomics, Proteomics & Bioinformatics (RMS5130), Applied Genomics, Proteomics & Bioinformatics (RMS5135)

Descriptions: Topics will include sequence alignment methods, substitution scores and gap penalties, the HMM model, recognition of motifs and patterns, phylogenetic data analysis and tree-building methods, detection of functional sites in DNA such as ORFs and CpG islands, folding classes in proteins, protein structure prediction and homology modelling.

Credit Points: 12

Learning Outcomes: To be advised.

Class Contact: 36 hours (3 hours lectures/workshops per week).


Assessment: Practicals and workshops (50%), tests (1 x 1hr, 20%) and final examination (2 hours, 30%).

RMS6135 BIOINFORMATICS II

Locations: Werribee.

Pre-requisites: RMS5110 - MOLECULAR GENETICS THEORY

Descriptions: Topics will include sequence assembly and finishing, large-scale genome analysis, simple and integrated genome and proteome circuits. In addition, examples of how the programming language, Perl, is used for biological analysis will be examined, such as the use of Perl modules and subroutines to find a common ancestor, splice junction recognition and enzyme kinetics.

Credit Points: 12

Learning Outcomes: To be advised.

Class Contact: Three hours per week of lectures and/or tutorials with some computer laboratory demonstrations.


Assessment: Practicals and workshops (30%); assignment (30%) and final examination (3hrs, 40%).

RMS6140 CELL CULTURE AND FERMENTATION TECHNOLOGY

Locations: Werribee.

Pre-requisites: Nil.

Descriptions: This unit will provide students with knowledge in the cultivation of microorganisms and higher eukaryotic cells at the small-scale laboratory and commercial scales. This includes plant culture, microbial fermentations and animal cell culture techniques. Topics will include batch, fed-batch and continuous cultures and bioreactors. The technology of stem cells will also be introduced and ethical issues regarding these will be discussed.

Credit Points: 12

Learning Outcomes: To be advised.

Class Contact: Three hours/week comprising lectures and practical work each alternate week.

Required Reading: Bryce, C.F.A., 1999, Fermentation Microbiology and Biotechnology, T&F STM.

Assessment: Three practical reports (40%); final examination (3hrs, 60%).

RMS6141 ANIMAL AND PLANT BIOTECHNOLOGY

Locations: Werribee.

Pre-requisites: Molecular Genetics Theory.

Descriptions: This unit will provide an in-depth understanding of how animal productivity and efficiency have been improved using technology such as embryo transfer, embryo splitting, in vitro fertilisation and cloning; principles of genetic engineering as applied to a wide range of plant species including wheat, canola oil and soy beans; use of transgenic technology to produce novel proteins and other biomolecules for the pharmaceutical industry.

Credit Points: 12

Learning Outcomes: To be advised.
Class Contact: Class contact will be three hours per week for one semester.


Assessment: One assignment (3000 words, 30%); one test (20%) and final examination (3h, 50%).

RMS6145 PROTEIN PRODUCTION, PURIFICATION & ANALYSIS

Locations: Werribee,

Pre-requisites: Nil.

Descriptions: Topics covered in the subject will include protein production in mammalian, bacterial, yeast and insect cell expression systems, protein purification and characterization using methods such as SDS-PAGE, purification using affinity and ion-exchange chromatography, protein crystallization, determination of protein structure, principles of X-ray crystallography and NMR in determining the structure of biological molecules including proteins.

Credit Points: 12

Learning Outcomes: To be advised.

Class Contact: Three hours a week lectures, tutorials or practicals.


Assessment: Practical reports (20%); one assignment (3000 words, 30%); final examination (3h, 50%).

RMS6170 DRUG DESIGN & DEVELOPMENT

Locations: Werribee,

Pre-requisites: First year undergraduate chemistry.

Descriptions: The concept of drugs and drug targets; drug action at proteins, nucleic acids and receptors; structural considerations; drug discovery, design and development; drug-target interactions; pharmacokinetics and quantitative structure-activity relationships (QSAR); combinatorial synthesis and computational chemistry in medicinal chemistry; specific drugs such as antibacterials, opioid analgesics, etc.; case studies with respect to rational drug design.

Credit Points: 12

Learning Outcomes: To be advised.

Class Contact: Two hours lectures and one hour computer laboratory per week for one semester.


Assessment: One assignment (3000 words, 20%); one test (1h each, 20% each) and final examination (3h, 60%).

RMS6200 PROJECT (BIOTECHNOLOGY)

Locations: Werribee, Industry,

Pre-requisites: Successful completion of first year of the SMBT degree or equivalent with an average grade of Distinction (H2A) or higher, including Research Methodology (RCS5100) or equivalent. The offering of this project unit option is subject to availability of suitable projects and supervisors, as well as quality of academic performance of the student in the course to date

Descriptions: Students will propose and conduct an independent, practical, hands-on biotechnology project either industry-based or internally offered. Students undertaking this option will be expected to apply the knowledge and skills gained from the coursework component of SMBT degree to the project. The project will be a scientific investigation of an approved topic, consisting of a comprehensive literature review, project proposal, conduct of laboratory or computer-based research, critical analysis and interpretation of results, clear and concise communication of these and discussion followed by a conclusion. The student will be expected to comply with all regulations concerning Occupational Health and Safety (OHS) and Good Laboratory Practice (GLP).

Credit Points: 36

Learning Outcomes: Upon completion of this unit, it is expected that students will be able to:

• Find, select, read and critically analyse published literature on a particular topic
• Competently formulate a sound experimental proposal
• Independently plan and carry out investigative laboratory experiments
• Objectively and critically analyse, discuss and report results obtained.

Class Contact: This unit will replace four electives in the existing Masters course. There are no contact hours in this unit as it is entirely project-based. A total of 432 hours input will be expected for the unit, consisting of literature searches, proposal writing, laboratory research work and report-writing for the unit. This unit is worth 48 credit points (25%) of the course.


Assessment: A report on all aspects of the project including literature review, aims of the proposal, experimental methods, results, critical evaluation of results and discussion, the length of which shall be in the range of 15,000 to 25,000 words (75%); appraisal and assessment from the supervisor of the oral & written communication and problem-solving skills of the student as well as the general conduct and performance in the project e.g. application, punctuality, compliance with OHS regulations and adherence to GLP principles.

RMS6201 PROTECTED AREA MANAGEMENT

Locations: Werribee,

Pre-requisites: To be advised.

Descriptions: This unit introduces students to the principles and practice of managing protected areas, such as national parks, game reserves and sanctuaries. Its specific aim is to develop the skills required to design and implement plans to protect ecologically important areas. Topics covered include the concept and changing nature of protected areas; economic and cultural values; Federal and state legislation; the process and implications of World Heritage listing; selection of protected areas; tourism; private protected areas; public education; threats to protected areas; commercialisation and sustainable bioresource use; and conflict analysis and resolution.

Credit Points: 12

Learning Outcomes: On successful completion of this unit, students are expected to be able to:

• identify the characteristics of major categories of marine and terrestrial protected areas
• locate and summarise relevant legislation
• identify threatening processes
• compare and contrast the principles and processes of public and private protected areas
• identify the major opportunities for commercialisation and their advantages and disadvantages
Class Contact: 36 hours for one semester comprising 18 hours of lectures, 12 hours of workshops and 6 hours of field trips.


Assessment: Written proposal (30%) 3,000 3,500 words. Oral presentation (15%) Written report (55%) 4,000 4,500 words. Students must attain a minimum mark of 50% in each assessable component to pass this unit of study.

**RMS6202 ENVIRONMENTAL MANAGEMENT PROJECT**

**Locations:** Werribee,

**Pre-requisites:** Successful completion of the first year of the SMEM degree or equivalent.

**Descriptions:** This unit provides students with the opportunity to plan and carry out an original independent project concerning an aspect of environmental management. Its specific aim is to develop research skills relevant to a particular area of interest. The project may range in scope from a field survey to a computer- or laboratory-based investigation, subject to approval from the unit co-ordinator.

**Credit Points:** 12

**Learning Outcomes:** On successful completion of this unit, students are expected to be able to:

- locate and analyse the literature on a selected topic
- develop a project proposal
- plan and carry out a project independently
- collect and interpret data
- prepare a report based on these data

**Class Contact:** 72 hours for one semester comprising 3 hours of lectures, 3 hours of workshops and 66 hours of practical work.


**Assessment:** Written proposal (15%) 3,000 3,500 words. Oral presentation (15%) Written report (70%) 10,000 10,500 words. Students must attain a minimum mark of 50% in each assessable component to pass this unit of study.

**RMS6203 ENVIRONMENTAL BIOTECHNOLOGY**

**Locations:** Werribee,

**Pre-requisites:** To be advised.

**Descriptions:** This unit will provide students with an overview of the role of biotechnology in environmental management. Topics covered will include: bioremediation, renewable energy, liquid and solid waste treatment, biotechnology and sustainable agriculture, the contribution of biotechnology to improving environmentally responsible industry practice, ethics and legal framework concerning biotechnology and environmental management.

**Credit Points:** 12

**Learning Outcomes:** On successful completion of this unit, students are expected to be able to:

- recognise the potential of biotechnology in addressing issues in environmental sustainability,
- assess and evaluate the impact of new applications in environmental biotechnology
- contribute to the development and interpretation of ethical and legal matters concerning environmental biotechnology

**Class Contact:** 36 hours for one semester comprising lectures and workshops.


**Assessment:** Written assignment (30%) 2,500-3,000 words. Examination (70%) Students must attain a minimum mark of 50% in each assessable component to pass this unit of study.

**RMS6205 MEDICAL BIOTECHNOLOGY**

**Locations:** Werribee,

**Pre-requisites:** To be advised.

**Descriptions:** This unit will provide students with an overview of the role of biotechnology in the diagnosis and treatment of a range of diseases and inherited disorders. Topics covered will include: Stem cell biology and technology, bioprocess and bioprocess biotechnology, mapping of the human genome, the roles of individual genes in predictive and diagnostic technologies and the use of therapeutic cloning in new treatment regimens.

**Credit Points:** 12

**Learning Outcomes:** On successful completion of this unit, students are expected to be able to:

- recognise the potential contribution of medical biotechnology to the improvement in human health and wellbeing.
- assess and evaluate the potential role of biotechnology in medical research and development.
- interpret legislative and regulatory frameworks that underpin medical biotechnology
- contribute to the public and professional discourse on ethical issues relating to medical biotechnology.

**Class Contact:** The equivalent of 36 hours for one semester comprising lectures and workshops.


**Assessment:** Written assignment (30%) 2,500-3,000 words. Examination (70%) Students must attain a minimum mark of 50% in each assessable component to pass this unit of study.

**RMS6210 RESEARCH PROJECT (BIOTECHNOLOGY) 1**

**Locations:** Werribee, Industry,

**Pre-requisites:** RCS5100 - RESEARCH METHODOLOGY

**Descriptions:** This unit provides students with the opportunity to plan and carry out an original independent biotechnology project, which is laboratory-based and will have industry involvement. Students will be expected to apply the knowledge and skills gained from the coursework component of the SMBT degree to the project. The project will be a scientific investigation of an approved topic, consisting of a literature review, project proposal, conduct of laboratory research and critical analysis and interpretation of results. Students will be expected to comply with all regulations concerning Occupational Health and Safety and Good Laboratory Practice.

**Credit Points:** 24

**Learning Outcomes:** On successful completion of this unit, students are expected to be able to:

- select, read and critically analyse published literature on a particular topic;
- competently formulate a sound experimental proposal;
- independently plan and carry out investigative laboratory experiments;
- objectively and critically analyse, discuss and report the results obtained.
Class Contact: The equivalent of 72 hours for one semester comprising lectures, workshops and practical work.

Required Reading: Texts and peer-reviewed literature related to the chosen topic.

Assessment: Written proposal (50%) 3,000-3,500 words. Oral presentation (30%) Poster (20%)

RMS6220 RESEARCH PROJECT (BIOTECHNOLOGY) 2

Locations: Werribee,
Pre-requisites: Successful completion of the first year of the SMBT degree, including RCS 5100 Research Methodology. Students achieving a Distinction average following the first year of their studies will be eligible to select an Industry-based project, subject to availability of suitable projects and supervisors.

Descriptions: Research Project 2 (Biotechnology) will run concurrently with Research Project 1 (Biotechnology) and will allow students with an interest in research to spend more time in consolidating their research skills. Students will develop hands-on laboratory skills and will be required to research the literature, undertake independent research, critically analyse the results and present these in a formal project report for the topic selected in Research Project 1 (Biotechnology). Students will be expected to comply with all regulations concerning Occupational Health and Safety and Good Laboratory Practice.

Credit Points: To be advised.

Learning Outcomes: On successful completion of this unit, students are expected to be able to:

- competently plan experiments with sound experimental design;
- independently carry out investigative laboratory experiments;
- critically and thoroughly analyse experimental results and discuss them in context with the published literature;
- write a clear and comprehensive report based on experimental findings.

Class Contact: The equivalent of 72 hours for one semester comprising lectures, workshops and practical work.

Required Reading: Texts and peer-reviewed literature related to the chosen topic.

Assessment: Report Written 100%

RMS6300 PROJECT (BIOTECHNOLOGY) 2

Locations: Werribee,
Pre-requisites: RMS5100 - ENVIRONMENTAL IMPACT ASSESSMENT FOR ECOLOGISTS Successful completion of the first year of the SMBT degree or equivalent, with an average grade of H2A (Distinction) or above.

The offering of this unit is subject to availability of suitable projects and supervisors, as well as quality of academic performance of the student in the course to date.

Descriptions: Students will either continue the project carried out in RMS6200 Project (Biotechnology) 1 or propose and conduct a new independent, practical, hands-on biotechnology project either industry-based or internally offered. Students undertaking this option will be expected to apply the knowledge and skills gained from the coursework component of SMBT degree as well as from Project (Biotechnology) 1. Students will be expected to carry out this project independently and in a highly professional manner, with soundly planned experiments, objective and critical analyses of results obtained and a comprehensive discussion on the findings. They will be expected to comply with all regulations concerning Occupational Health and Safety (OH&S) and adhere to Good Laboratory Practice (GLP).

Credit Points: 48

Learning Outcomes: Upon completion of this unit, it is expected that students will be able to Competently plan experiments with sound experimental design Independently carry out investigative laboratory experiments Critically and thoroughly analyse experimental results and discuss them in context of published literature in the area Write a clear and comprehensive report based on experimental findings.

Class Contact: This is a 100% project unit with no class contact. However, 432 hours of project work including literature searches, planning, laboratory research and writing will be expected.


Assessment: A comprehensive, professional-style report including literature review, aims, experimental design, materials & methods, results, discussion and conclusion, the length of which shall be in the range of 20 - 40,000 words (75%); appraisal and assessment from the supervisor about the performance of the student in the project e.g. independence of thought, planning and conduct of project, oral & written communication and problem-solving skills of the student as well as the general conduct and performance in the project e.g. application, punctuality, compliance with OH&S regulations and adherence to GLP principles.

RNH3210 SPECIAL TOPICS IN NUTRITION, FOOD AND HEALTH SCIENCE

Locations: Werribee,
Pre-requisites: RBF2750 Nutrition, or RBF2260 Diet and Nutrition, or equivalent, and RBF2210 Food Components or equivalent

Descriptions: To develop and study a selected aspect of nutrition and food science, requiring conduct of a project of a selected topic. Recent advances and controversies in selected topics of nutrition and food science, including: GMO’s, nutrition labelling, nutrient fortification, reference intake levels, nutrigenomics.

Credit Points: 6

Learning Outcomes: To be advised.

Class Contact: Nil, however, students are expected to spend at least three hours per week in the library.

Required Reading: Student will be responsible for reviewing current literature on their project topic.

Assessment: Presentation 20%, report 80%.

RPH1111 ASTRONOMY

Locations: Footscray Park,
Pre-requisites: To be advised.

Descriptions: History of astronomy, telescopes, our sun, solar system, comets, meteors, the night sky, stellar evolution and spectra, variable stars, distances of celestial objects, galaxies, some predictions of Einstein’s theory of relativity, the possibility of intelligent life elsewhere in the universe and high power astronomy (pulsars, black holes and quasars).

Credit Points: 12

Learning Outcomes: Knowledge of Astronomy: To gain a good overview of our current knowledge of the universe, including its formation and the subsequent evolution of stars and galaxies. Practical Astronomy: To be able to use an amateur telescope to view well known stellar objects.

Class Contact: 48 hours per semester comprising 36 hours of lectures/tutorial and 12 hours of laboratory


Assessment: Practical sessions 20% Assignments 80%
RPH4411 PHYSICS 4 (HONOURS)

Locations: Footscray Park.

Pre-requisites: Eligibility for entry to the Bachelor of Science (Honours) in Physics program.

Descriptions: This unit consists of advanced coursework and a research thesis. Compulsory core units of quantum mechanics, statistical mechanics and research methods, plus elective units from the following areas: optical waveguides and sensors, relativity, surface physics, beam techniques, optics of materials, laser physics, lasers and optoelectronics, fibre optics, solid state physics, diffraction from crystals, nuclear physics. Other electives may be approved, including those offered at other universities. All electives must be approved by the Course Coordinator.

Research Thesis: A research project will be undertaken in one of the Physics research areas, under the supervision of a member of academic staff. Subject to approval, research may be undertaken at a laboratory outside the University.

Credit Points: 48

Learning Outcomes: To be advised.

Class Contact: Average of 20 hours per week for two semesters.


Assessment: is based on coursework, 50%; research thesis, 50%. The research project will consist of oral presentation and a thesis of approximately 5,000-10,000 words.

RPH4412 PHYSICS 4 (HONOURS)

Locations: Footscray Park.

Pre-requisites: Eligibility for entry to the Bachelor of Science (Honours) in Physics program.

Descriptions: Coursework: Compulsory core units of quantum mechanics, statistical mechanics and research methods, plus elective units from the following areas: optical waveguides and sensors, relativity, surface physics, beam techniques, optics of materials, laser physics, lasers and optoelectronics, fibre optics, solid state physics, diffraction from crystals, nuclear physics. Other electives may be approved, including those offered at other universities. The Course Coordinator must approve all electives. Research Thesis: A research project will be undertaken in one of the Physics research areas, under the supervision of a member of academic staff. Subject to approval, research may be undertaken at a laboratory outside the University.

Credit Points: 48

Learning Outcomes: Advanced coursework: To gain a deeper understanding of quantum mechanics and statistical mechanics, and in addition undertake further studies in areas of physics related to the thesis. Research thesis: To gain experience in the conduct of a research project.

Class Contact: Average of 20 hours per week for one semester


Assessment: The grade for RPH4411 shall be either “S” or “U”. An “S” grade will be awarded for satisfactory progression in both the coursework and research thesis components, for which the overall result for 2 semesters will be provided under RPH4412.

RPH8001 RESEARCH THESIS 1 FULL TIME

Locations: To be advised.

Pre-requisites: To be advised.

Descriptions: This unit of study is part of a research degree program. Information on research topics for the Faculty of Health, Engineering and Science may be found on the faculty website at the following link: http://www.vu.edu.au/Faculties/HealthEngineeringandScience/ResearchandResearchTraining/MajorResearchAreas/Assessment criteria and Core Research Graduate Attributes can be found on the Office for Postgraduate Research website at the following link: http://www.vu.edu.au/Research/OfficeforPostgraduateResearch/PolicyProcessesandGuidelines/

Credit Points: 48

Learning Outcomes: To be advised.

Class Contact: To be advised.

Required Reading: To be advised.

Assessment: To be advised.

RPH8002 RESEARCH THESIS 2 FULL TIME

Locations: To be advised.

Pre-requisites: To be advised.

Descriptions: This unit of study is part of a research degree program. Information on research topics for the Faculty of Health, Engineering and Science may be found on the faculty website at the following link: http://www.vu.edu.au/Faculties/HealthEngineeringandScience/ResearchandResearchTraining/MajorResearchAreas/Assessment criteria and Core Research Graduate Attributes can be found on the Office for Postgraduate Research website at the following link: http://www.vu.edu.au/Research/OfficeforPostgraduateResearch/PolicyProcessesandGuidelines/

Credit Points: 48

Learning Outcomes: To be advised.

Class Contact: To be advised.

Required Reading: To be advised.

Assessment: To be advised.

RPH8011 RESEARCH THESIS 1 PART TIME

Locations: To be advised.

Pre-requisites: To be advised.

Descriptions: This unit of study is part of a research degree program. Information on research topics for the Faculty of Health, Engineering and Science may be found on the faculty website at the following link: http://www.vu.edu.au/Faculties/HealthEngineeringandScience/ResearchandResearchTraining/MajorResearchAreas/Assessment criteria and Core Research Graduate Attributes can be found on the Office for Postgraduate Research website at the following link: http://www.vu.edu.au/Research/OfficeforPostgraduateResearch/PolicyProcessesandGuidelines/

Credit Points: 24

Learning Outcomes: To be advised.

Class Contact: To be advised.

Required Reading: To be advised.

Assessment: To be advised.

RPH8012 RESEARCH THESIS 2 PART TIME

Locations: To be advised.

Pre-requisites: To be advised.

Descriptions: To be advised.
Credit Points: 24
Learning Outcomes: To be advised.
Class Contact: To be advised.
Required Reading: To be advised.
Assessment: To be advised.

RSS3000 INDUSTRY PROJECT
Locations: Werribee, St Albans,
Pre-requisites: Successful completion of Years 1 and 2 of SBSS BSc (Specialisation).
Descriptions: Industry Project is designed to engage students in workplace learning via student projects conducted in association with industry or projects related to current industry practice. Industry Project provides students with opportunities to apply previous learning to a project designed to link practice and theory. Projects are designed to deepen students’ knowledge of their professional practice in realistic contexts, to further develop their employability and generic skills and provide a significant contribution to graduate work and career readiness. Projects can involve work conducted at Victoria University or within industry or community or both. Projects can include reports, practical work, fieldwork, industry placements. This unit is completed with advice from an approved supervisor. Assessment is according to the project and is by negotiated agreement amongst the relevant and approved industry partners and may be external where appropriate.

Credit Points: 12
Learning Outcomes: On successful completion of this unit, students are expected to be able to:

- locate, manage and use scientific information efficiently and effectively;
- solve scientific problems effectively in a range of settings including industry and community;
- exhibit high levels of numeracy skills in a range of scientific settings;
- communicate effectively in spoken and written forms on a range of scientific and mathematical topics to professional and community groups;
- apply an evidence-based research approach to a chosen area of science;
- respond with social and cultural awareness within local and global environments;
- work autonomously and collaboratively as a professional in both industry and community settings;
- autonomously manage own learning to achieve career and learning goals.

Class Contact: Projects will involve work conducted at Victoria University or within industry, the community or both. Projects can range from reports or practical work to fieldwork or industry placements. Contact hours are dependant on the type of project undertaken and will be arranged by negotiation with the students approved RSS3000 Industry Project unit supervisor(s).

Required Reading: Reading materials will be negotiated in consultation with the supervisor(s) and will be appropriate to the topic under investigation. Where appropriate students will be advised to consult with the Learning in the Workplace and Community Policy and the Learning in the Workplace and Community: Operational Guidelines.

Assessment: Assessment depends upon the project and components within the project. All assessment items will be decided prior to commencement of semester and in conjunction with the student’s approved supervisor(s). Where applicable, assessment and its negotiation may involve the relevant industry or community partners. All students will be assessed according to: project and project components (80%), and at least one formal oral presentation (20%). Project Assessable components determined following negotiation with the approved supervisor(s) 80%
socially and culturally diverse;

- Recognise that a range of written scientific formats aimed at various audiences are an essential requirement of a communicator of science;
- Best establish a process of learning how to learn and educational empowerment;
- Produce portfolios incorporating assignments and laboratory reports in a range of formats, all of which tie into settings that are both socially and culturally diverse;
- Communicate orally with peers and various other audiences through presentations, discussions and debates;
- Come to a realisation that the understanding of differing social and cultural settings and those who inhabit them and means of affecting them is a strength, empowering one’s education, providing unique preparation for future educational and vocational outcomes.

Class Contact: Seventy-two (72) hours or equivalent for one semester comprising lectures, tutorials, workshops, practical classes and placements.


Assessment: In order to obtain a pass or higher in this graded unit, normally all components of assessment must be passed. Project Portfolios and presentations 50%

SED1202 COMMUNITY BASED GENERAL SCIENCE 2

Locations: Footscray Park,

Pre-requisites: Nil.

Descriptions: This unit develops students’ abilities to work effectively both autonomously and collaboratively as a means to further develop knowledge, skills, literacy competency and attitudes in the understanding, interpretation, communication and promotion of science within the community. The unit provides students with a background in general science (taking in aspects of physics, chemistry, biology and earth sciences), and requires that students produce and implement community-based projects that integrate this science background. Science areas include chemiluminescence, polymers, electricity, magnetism, gases in the atmosphere, fermentation and combustion science. Students will develop a science troupe to produce and perform general and subject science demonstrations or shows and resource materials for the primary and secondary education sectors.

Credit Points: 12

Learning Outcomes: On successful completion of this unit, students are expected to be able to:

- Individually and collaboratively, explain, report on, build upon knowledge and convey the major concepts outlined in each of the subject areas to both a peer-based and multilayered community audiences;
- Utilise the strengths of collaborative and autonomous approaches in the development, implementation and evaluation of community-based science projects;
- Explore how collaborative and autonomous strengths can aid further collaborative and autonomous efforts;
- Develop processes that prevent future possible lapses in the collaborative process and utilise this understanding to enhance future autonomous and collaborative ventures;
- Develop processes that avoid problems previously associated with autonomous approaches in the development, implementation and evaluation of science-based community projects and ventures and to utilise this understanding in enhancing future autonomous and collaborative projects;
- Further extend competency in literacy and numeracy;
- Recognise the social and culturally diverse natures of collaborative science-based community projects and utilise the experiences gained in future collaborative and autonomous projects and undertakings;
- Critically examine how to best impart science-based material to a variety of audiences without necessarily sacrificing science content;
- Apply knowledge, skills and values that will allow students to reflect on the best ways to communicate science to a variety of audiences and simultaneously maintain and build upon the student’s more advanced understanding of the subject matter;
- Further enhance laboratory skills and work effectively in collaborative laboratory work;
- Further enhance skills in collecting and appropriately recording data;
- Further develop learning strategies for the successful understanding, application and communicating of science-based content within collaborative and autonomous frameworks;
- Further enhance skills in preparing succinct laboratory reports in correct scientific styles and formats;
- Recognise the need for, and locate and critically analyse scientific data;
- Recognise the need for, and locate and critically analyse ways of conveying scientific content to an audience and to be able to critically assess the quality of past studies and experiences in the areas of science studied;
- Facilitate constructive interplay between science content and the communication of science as a means of more effectively dispersing science content and inspiring and affecting the students understanding of the science areas undertaken;
- Recognise that the various written scientific formats, such as reviews, case studies, original reports, reflective writing and writing for community-based audiences, are of variable scientific merit;
- Produce portfolios incorporating assignments and laboratory reports in a range of formats that are collaboratively and autonomously produced;
- Verbally communicate science with peers and community groups and individuals through presentations, discussions and debates.

Class Contact: Seventy-two (72) hours or equivalent for one semester comprising lectures, tutorials, workshops, practical classes and placements.


Assessment: In order to obtain a pass or higher in this graded unit, normally all components of assessment must be passed. Project portfolios and presentations 50%

SED2103 COMMUNITY BASED GENERAL SCIENCE 3

Locations: Footscray Park,

Pre-requisites: SED1101 - COMMUNITY BASED GENERAL SCIENCE 1 or equivalents.

Descriptions: This unit develops the student’s problem solving skills and literacy competency as applied to science content and science-based community initiatives and projects. Students will be provided with a background in science concepts (in aspects of physics, chemistry, biology and earth sciences), upon which students will produce resources, including multimedia, and implement community-based projects and professional development workshops for primary and secondary school educators. Topics in this unit will include bio-fuels, colligative properties, sound, hydroponics, cell cultures, anthocyanin pigments and applications of chromatography.

Credit Points: 12
Learning Outcomes: On successful completion of this unit, students are expected to be able to:

- Decide upon a planned detailed response and implementation of the response(s) in solving problems associated with science-based community projects;
- Decide upon response procedures and an implementation of responses in areas beyond the scope of the project where autonomous, collaborative, varying social and culturally diverse situations may apply;
- Alter and re-coordinate response procedures if required;
- Establish codes of conduct that are amenable to adoption by others to expedite the problem solving process;
- Mentor in the process of science-based problem solving;
- Establish and be well versed in the link between research and the problem-solving process and to make this link accessible and knowledgeable to others;
- Identify the limitations in the problem-solving process and work around them;
- Tie together parties in a collaborative response and allow for independent work to best meet the requirements of the problem and its solving;
- Develop a means of predicting and preventing future possible lapses in the problem-solving process;
- Critically examine how to best communicate science based material inbuilt into problem-based scenarios to a variety of audiences without diminishing science content;
- Apply knowledge, skills and values that allow reflection on the best ways to communicate problem solving science to a variety of audiences and simultaneously maintain and build upon a more advanced understanding of the subject matter;
- Utilise and communicate unit content in the science problem-based project and evaluate its success;
- Further enhance laboratory skills and its application to problem solving;
- Further enhance skills in collecting and appropriately recording data;
- Further develop learning strategies for the successful understanding, application and communicating of problem-based science;
- Further enhance skills when preparing a succinct laboratory report in scientific method format and detailing the problem solving process;
- Recognise the need for, locate and critically analyse scientific data;
- Recognise the need for, locate and critically analyse ways of conveying scientific content to an audience;
- Critically assess the quality of past studies and experiences in specified areas of science;
- Facilitate constructive interplay between science content and the communication of science as a means of more effectively dispersing science content and inspiring with science content and affecting the student's understanding of the science areas undertaken;
- Demonstrate further literacy and numeracy skills;
- Identify a range of written scientific formats, such as reviews, case studies, original reports, reflective writing and writing for a community-based audience and recognise that the writings may be of variable scientific merit;
- Produce portfolios incorporating assignments and laboratory reports in a range of formats that are collaboratively and autonomously produced and outline key areas in the problem solving approach;
- Communicate orally with peers and community groups and individuals through presentations, discussions and debates in the context of science content.

Class Contact: Seventy-two (72) hours or equivalent for one semester comprising lectures, tutorials, workshops, practical classes and problem-based projects.

Required Reading: To be advised.

Assessment: In order to obtain a pass or higher in this graded unit, normally all components of assessment must be passed. Project Portfolios and presentations 50%

SED2204 COMMUNITY BASED GENERAL SCIENCE 4

Locations: Footscray Park,

Pre-requisites: SED1101 - COMMUNITY BASED GENERAL SCIENCE 1 or equivalents.

Descriptions: This unit further develops literacy levels and abilities to locate, evaluate, and use scientific and science based information and research effectively in an effort to develop, run and evaluate a science-based community oriented project/program/initiative that benefits educationally both the student and the community. The unit focuses on providing students with a background in science concepts in physics, chemistry, biology and earth sciences, and in particular in saponification and detergents, alginates and chelants, holography, Archimedes's Principles, photography and other science based areas. Students are then required to produce and implement community-based projects that integrate the science background. Students will be required to develop and deliver a continuing science-based project within a secondary level setting in a science-based competition or a science-based club within an organisation.

Credit Points: 12

Learning Outcomes: On successful completion of this unit, students are expected to be able to:

- Locate, evaluate, manage and utilise information pertinent to the planning, construction, running and evaluating of a science-based community-based project(s) or initiatives;
- Use information that provides for enquiry by the project's audience and participants;
- Establish ways and means that effectively insure that unit content is utilised in a way that will benefit the student, the audience and the project(s)/initiatives;
- Develop editing processes that take into account the needs of the audience;
- Develop, maintain and re-create ways of communicating science-based ideas to an audience that has vastly differing science backgrounds;
- Develop portfolios that simultaneously incorporate aspects of science communication, ensuring that information contained within, including reflective pieces, are significant resources to aid future projects for themselves and others;
- Predict the limitations and work around them when establishing project partnerships;
- Communicate science ideas and content visually and orally within a limited timeframe and critically examine the stated goals and impact of the communication;
- Work collaboratively with other professionals in establishing, running and evaluating the science based community project;
- Develop a values system that serves the community well in accessing science based knowledge;
- Further build upon a more advanced understanding of subject material;
- Continue to enhance laboratory skills;
- Continue to enhance skills in collecting and appropriately recording data;
- Continue to develop learning strategies;
- Continue to enhance skills in researching and preparing succinct laboratory reports in scientific method format;
be able to:

• Establish ways and means that effectively ensure that unit content is utilised in a way that will benefit the student, the audience and the project(s)/initiative and will best serve to emphasise the importance of the role of a citizen;

• Further enhance the communicative process;

• Develop portfolios that simultaneously incorporate aspects of science communication, ensuring that information contained within, including reflective pieces, are significant resources to aid future projects for themselves and others;

• Identify the limitations and seek ways and means of working around these limitations, so as to strengthen their resolve and their capacity as professionals and as citizens;

• Communicate science ideas, management strategies, and identify possible problems and resolutions to these problems via communication with other professional bodies;

• Work collaboratively with other professionals in establishing, running and evaluating science-based community projects;

• Discuss a values system that serves the community well in accessing science-based knowledge;

• Further competency in literacy and numeracy;

• Further build upon more advanced understanding of subject material and content;

• Continue to enhance laboratory skills;

• Continue to enhance skills in collecting and appropriately recording data;

• Continue to develop learning strategies and pass these on to other members of the community to further cement the notion of citizenship;

• Continue to enhance skills in researching and preparing succinct laboratory reports in scientific method format;

• Enhance skills in researching and preparing reports that are of a professional level maintaining the high level of scientific publication standard;

• Facilitate constructive interplay between science content and the communication of science as a means of more effectively dispersing science content and inspiring with science content and affecting the student’s understanding of the science areas undertaken;

• Identify a range of written scientific formats, such as reviews, case studies, original reports, reflective writing and writing for a community-based audience and recognise that the writings may be of variable scientific merit;

• Work collaboratively with other professionals in establishing, running and evaluating science-based community projects;

• Discuss a values system that serves the community well in accessing science-based knowledge;

• Further competency in literacy and numeracy;

• Further build upon more advanced understanding of subject material and content;

• Continue to enhance laboratory skills;

• Continue to enhance skills in collecting and appropriately recording data;

• Continue to develop learning strategies and pass these on to other members of the community to further cement the notion of citizenship;

• Continue to enhance skills in researching and preparing succinct laboratory reports in scientific method format;

• Enhance skills in researching and preparing reports that are of a professional level maintaining the high level of scientific publication standard;

• Facilitate constructive interplay between science content and the communication of science as a means of more effectively dispersing science content and inspiring with science content and affecting the student’s understanding of the science areas undertaken;

• Identify a range of written scientific formats, such as reviews, case studies, original reports, reflective writing and writing for a community-based audience and recognise that the writings may be of variable scientific merit;

• Extend the role of the citizen through science and science education.

Class Contact: Seventy-two (72) hours or equivalent for one semester comprising lectures, tutorials, workshops, practical classes and problem-based projects.


Assessment: In order to obtain a pass or higher in this graded unit, normally all components of assessment must be passed. Project Portfolios and presentations 50%
fair at a junior secondary level, and mentor and assist students in the design and production of group or individual science projects to be showcased at an end-of-year science fair. Students will continue to promote science to the wider community.

Credit Points: 12

Learning Outcomes: On successful completion of this unit, students are expected to be able to:
- Identify their role as scientists and science communicators within the community;
- Establish protocols and communication traits that foster and facilitate effective and professional transfer of science information in various forms and formats and through contacts, the articulation of science concepts, research skills, writing skills for specific audiences, intuitive learning practices and problem solving skills;
- Discuss the importance of their role in the community and identify their professional role and commitment to the community as a citizen and communicator of facts, ideas and ideals generally but not exclusively from the discipline of science;
- Project-manage community science-based educational initiatives.

Class Contact: Seventy-two (72) hours or equivalent for one semester comprising lectures, tutorials, workshops, practical classes and problem-based projects.


Assessment: In order to obtain a pass or higher in this graded unit, normally all components of assessment must be passed. Project Community-based science project: portfolio and presentation (peer assessment: 50% external assessment: 50%) 100%

VAA2002 ELECTRICAL POWER SYSTEMS 1

Locations: Footscray Park,

Pre-requisites: REP 1003 Engineering Physics 1C


Credit Points: 12

Learning Outcomes: To be advised.

Class Contact: three hrs of lectures and two hrs of tutorials/laboratory per week


Assessment: Electrical Circuits (EC) - 8 weeks work: Homework submissions (4 @ 5%), 20%; Laboratory Report, 10%; Mid-semester test: (Based on weeks 1-6), 20%; Power Distribution (PD) - four weeks work: Homework submissions (2 @ 5%), 10%; Project (2000 words equivalence), 15%; three hour examination, 50%; Weighting, 66.7% of [EC + PD] + 3hr exam = subject assessment. Based on a project, 20%; and a review of all assignments (which may include tests and other class exercises) set during the semester, 10%; and a final three hour examination, 70%.

VAA3001 ELECTRICAL POWER SYSTEMS 2

Locations: Footscray Park,

Pre-requisites: VAA 2002 Electrical Power Systems 1


Credit Points: 12

Learning Outcomes: To be advised.

Class Contact: three hrs of lectures and two hrs of tutorials/laboratory per week


Assessment: Class participation, 5%; Project, 30%; (individual report 5000 words equivalence); Final three hour examination, 65%.

VAA3031 ENVIRONMENTALLY SUSTAINABLE DESIGN 1

Locations: Footscray Park,

Pre-requisites: VAN2041 Thermofluids.

Descriptions: This unit of study aims to give students a basic understanding, problem solving skills and design skills in the areas of sustainable design of buildings. Major topics covered include: climate change, basic principles of ecological buildings; buildings of tomorrow: examples and ideas, including natural ventilation in buildings, thermal storage, façade design for daylighting and solar energy transmission, air quality improvement; active measures of renewable energy usage, including solar, wind and geothermal energy; use of rainwater and organic matter.

Credit Points: 12

Learning Outcomes: Upon successful completion of this unit, students will have demonstrated:
- an understanding of key issues and design principles involved in sustainable design of buildings and building engineering systems
FACULTY OF HEALTH, ENGINEERING AND SCIENCE

- an ability to research information, policies and data relevant to these areas
- an ability to outline and evaluate possible solutions applicable to domestic and commercial buildings.
- an ability to work effectively as a member and/or leader of a team, and to time manage multiple tasks.
- good communication skills, based on technical reports and oral presentations.

Class Contact: This unit will be delivered in PBL mode, and will comprise 60 hours (5 hours equivalent per week) of sessions made up of small group work, team meetings, lectures, workshops, seminars, practical work and site visits. In addition, students are expected to devote at least the same amount of time for private and/or group study. The unit is worth 12 credit points.

Required Reading: Daniels, K., 1997, The Technology of Ecological Building, Birkhauser; Class notes.

Assessment: Based 100% on an individual portfolio which documents evidence that the learning outcomes have been achieved. The portfolio may include skills audit results, assignment/project reports including technical calculations, site visit and/or laboratory reports, a reflective journal, workbook(s), and self and peer assessment. Further details on portfolio components will be issued to students during the first week of classes.

VAA3042 HYDRAULIC SERVICES SYSTEMS

Locations: Footscray Park,

Pre-requisites: VAC 2042 Hydraulic Services

Descriptions: This unit of study aims to give students a basic understanding, problem solving and design skills in the areas of building water supply, sanitary plumbing and stormwater management. It covers the following topics. Types and components of building water supply systems. Assessment of demands and flows. Design criteria, head losses in pipes and fittings. Analysis and design of hot and cold pipework systems. Pumps-pump and pipeline selection. Pressure systems. Selection and arrangement of mains pressure commercial hot water units to supply to hot water fixture outlets. Theory and design of roof drainage, storm water systems and sewer drainage systems including materials, fixtures and fittings, and the general requirements for fully vented and modified, single stack and modified sewage plumbing systems, all for building sites, residential and multi storied commercial buildings. Introduction to wastewater treatment processes and building water harvesting/recycling systems.

Credit Points: 12

Learning Outcomes: Upon successful completion of this unit, students will have demonstrated:

- an understanding of key issues and design principles involved in hydraulic services systems in buildings
- an ability to locate and effectively use information/data relevant to these areas.
- an ability to identify, formulate and solve related problems, and to carry out associated design work.
- an ability to evaluate solutions against technical, environmental, economic and social criteria.
- an ability to work effectively as a member and/or leader of a team, and to time manage multiple tasks.
- good communication skills, based on technical reports and oral presentations.

Class Contact: This unit will be delivered in PBL mode, and will comprise 60 hours (5 hours equivalent per week) of sessions made up of small group work, team meetings, lectures, workshops, seminars and reading assignments. In addition, students are expected to devote at least the same amount of time for private and/or group study.

Assessment Based 100% on an individual portfolio which documents evidence that the learning outcomes have been achieved. The portfolio may include skills audit results, assignment/project reports including technical calculations, site visit and/or laboratory reports, a reflective journal, workbook(s), and self and peer assessment. Further details on portfolio components will be issued to students during the first week of classes.
VAA3071 HVAC SYSTEMS 1

Locations: Footscray Park,

Pre-requisites: VAA3001 - THERMOFLUIDS


Credit Points: 12

Learning Outcomes: To be advised.

Class Contact: Two hrs of lectures and three hrs of tutorials per week.


Assessment: Assignment 1: (group assignment, up to 2500 words), 30%; Assignment 2: (group assignment; up to 2000 words + calculations + diagrams), 35%; two hour examination, 35%.

VAA3072 HVAC SYSTEMS 2

Locations: Footscray Park,

Pre-requisites: HVAC Systems 1.


Credit Points: 12

Learning Outcomes: To be advised.

Class Contact: two hrs of lectures and three hrs of tutorials per week.


Assessment: Assignment 1 (group assignment; up to 3000 words), 30%; Assignment 2 (group assignment; up to 3000 words), 35%; two hour examination, 35%.

VAA3081 BUILDING CONSTRUCTION AND LEGISLATION 1

Locations: Footscray Park,

Pre-requisites: VAA2031 Architectural History and Design


Credit Points: 12

Learning Outcomes: Upon successful completion of this unit, students will have demonstrated:

- an understanding of the fundamentals of conventional and innovative forms of construction.
- familiarity with building terminology.
- an appreciation of the involvement of various building trades, professions, and authorities.
- knowledge in relation to building standards and statutory requirements.
- an understanding of the causes and treatment of common building problems.
- skills in the formulation of building schemes and details and the planning of construction work.

Class Contact: This unit will be delivered in PBL mode, and will comprise 60 hours (5 hours equivalent per week) of sessions made up of small group work, team meetings, lectures, workshops, seminars, practical work and site visits. In addition, students are expected to devote at least the same amount of time for private and/or group study. The unit is worth 12 credit points.

Required Reading: Australian Building Codes Board (ABCB) (2005), Building Code of Australia (BCA) 2005 Volume Two, CanPrint Communications Pty Ltd; Class Notes

Assessment: Based 100% on an individual portfolio which documents evidence that the learning outcomes have been achieved. The portfolio may include skills audit results, assignment / project reports including graphical and written designs and specifications detailing creative building solutions appropriate to various property development applications, a reflective journal, workbook(s), and self and peer assessment. Further details on portfolio components will be issued to students during the first week of classes.

VAA4001 ARCHITECTURAL LIGHTING AND COMMUNICATIONS SYSTEMS

Locations: Footscray Park,


VAA4032 ENVIRONMENTALLY SUSTAINABLE DESIGN 3

Locations: Footscray Park,


Descriptions: Introduction to building performance analysis tools (software used by architects and engineers in compliance with energy efficiency provisions of the Building Code of Australia). Computer modelling of buildings including thermal and solar performance, natural ventilation, natural and artificial lighting and CFD. Analysis of alternative scenarios to optimise the performance of the building through the design process.

Credit Points: 12

Learning Outcomes: On successful completion of this unit, students are expected to be able to:

- model complex situations involving integrated building design in the area of thermal performance, natural ventilation, air conditioning, solar penetration, thermal comfort, and natural artificial lighting;

- analyse alternative scenarios to achieve optimised building design.

Class Contact: Two hours of lectures and three hours of tutorials per week.


Assessment: Assignment 1: (report on your home: benchmarks and rating) (30%); Assignment 2: (commercial premises: benchmark historical performance and simulate the impact of various possible renovations) (70%).

VAA4042 BUILDING FIRE SAFETY SYSTEMS

Locations: Footscray Park,

Pre-requisites: Nil.


Credit Points: 12

Learning Outcomes: To be advised.

Class Contact: Three hrs of lectures and two hrs of tutorials/laboratory per week.


Assessment: Architectural Lighting (AL) - three hours per week: Tutorial work assessment (5 submissions @ 2%), 10%; Project 1 - Assessment of existing lighting system (2000 words equivalence), 20%; Project 2 - Design of a lighting system, 30%; Communications Systems (CS) - two hours per week: Project 1 (Individual report 2000 words equivalence), 15%; Project 2 (Individual report 3000 words equivalence), 25%; Final three hour examination, 50%; Weighting, 50% of (AL + CS) + 3hr exam = subject assessment.

VAA4051 BUILDING QUANTITIES AND COSTS

Locations: Footscray Park,

Pre-requisites: VAN3052 Engineering Management.


Credit Points: 6

Learning Outcomes: To be advised.

Class Contact: Two hrs of lectures and 1hr of tutorial and computer lab session per week.


Assessment: Assignment 1: fire-safety services investigation (sketches, max word limit of 3000), 20%; Assignment 2: hydraulic design using hyena software (calculations, sketches, max word limit of 3000), 20%; Class Tutorial Exercises (sketches, max word limit of 1500), 10%; three hour Examination, 50%.

VAA4071 HVAC SYSTEMS 3

Locations: Footscray Park,

Pre-requisites: VAA3072 HVAC Systems 2.


Credit Points: 12

Learning Outcomes: To be advised.

Class Contact: Three hrs of lectures and two hrs of tutorials/laboratory per week.


Assessment: Architectural Lighting (AL) - three hours per week: Tutorial work assessment (5 submissions @ 2%), 10%; Project 1 - Assessment of existing lighting system (2000 words equivalence), 20%; Project 2 - Design of a lighting system, 30%; Communications Systems (CS) - two hours per week: Project 1 (Individual report 2000 words equivalence), 15%; Project 2 (Individual report 3000 words equivalence), 25%; Final three hour examination, 50%; Weighting, 50% of (AL + CS) + 3hr exam = subject assessment.
Students will be able to:

- gained an appreciation of major plant and equipment, techniques and practices typically employed in high-rise construction work.
- become familiar with structural features and services installations specific to tall buildings.
- gained an appreciation of the involvement of principal consultants and contractors.
- enhanced their knowledge of urban development and building regulatory procedures, codes and standards.
- become more skilled in space and amenity planning; and
- gained an appreciation of major plant and equipment, techniques and practices typically employed in high-rise construction work.

**Learning Outcomes:**

- Developed an understanding of the nature of building construction in heavily-developed urban environments;
- become familiar with structural features and services installations specific to tall buildings;
- gained an appreciation of the involvement of principal consultants and contractors;
- enhanced their knowledge of urban development and building regulatory procedures, codes and standards;
- become more skilled in space and amenity planning; and
- gained an appreciation of major plant and equipment, techniques and practices typically employed in high-rise construction work.

**Class Contact:**

This unit will be delivered in PBL mode, and will comprise 36 hours (3 hours equivalent per week) of sessions made up of small group work, team meetings, lectures, workshops, seminars, practical work and site visits. In addition, students are expected to devote at least the same amount of time for private and/or group study. The unit is worth 6 credit points.

**Required Reading:**

- Australian Building Codes Board (ABCBC) (2005), Building Code of Australia (BCA) 2005 Volume One, CanPrint Communications Pty Ltd; Burnell, R., VAA4082 Class Notes.

**Assessment:**

Based 100% on an individual portfolio which documents evidence that the learning outcomes have been achieved. The portfolio may include skills audit results, assignment / project reports including technical calculations, site visit reports, a reflective journal, workbook(s), and self and peer assessment. Further details on portfolio components will be issued to students during the first week of classes.

**VAA4091 STRUCTURAL DYNAMICS 1**

**Locations:** Footscray Park,

**Pre-requisites:** RMA 1002 Engineering Mathematics 1B & REP 1003 Engineering Physics 1C.

**Descriptions:** Introduction to structural vibrations. Degree of freedom of a system - vibrations of undamped and damped systems, harmonically excited vibration of systems, response systems to harmonically forced excitation, general forcing functions. Eigenvalue for a system, determination of natural frequencies and mode shapes, structural vibration simulation using computer software.

**Credit Points:** 6

**Learning Outcomes:**

- be able to understand problems and procedures involved in co-ordination of individual building services.
- be able to understand principles of successful integration of all building services during the design and construction stages.
- be able to conceptualise solutions to construction technology tasks and problems, logistical planning and assembly.
- have enhanced their report writing and oral presentation skills.

**Class Contact:** This unit will be delivered in PBL mode, and will comprise 36 hours (3 hours equivalent per week) of sessions made up of small group work, team meetings, lectures, workshops, seminars, practical work and site visits. In addition, students are expected to devote at least the same amount of time for private and/or group study. The unit is worth 6 credit points.

**Required Reading:** Paks, M. et al, VAA4092 Class Notes.

**Assessment:** Based 100% on an individual portfolio which documents evidence that the learning outcomes have been achieved. The portfolio may include skills audit results, assignment / project reports including technical calculations, site visit reports, a reflective journal, workbook(s), and self and peer assessment. Further details on portfolio components will be issued to students during the first week of classes.
VAC2022 BUILDING MATERIALS AND CONSTRUCTION

Locations: Footscray Park,

Pre-requisites: Nil

Descriptions: Sand and crushed rock: excavation, drilling, blasting, conveyance, crushing, screening, washing, storage, use. Concrete: constituents, mix design, laboratory tests and standards for strength, workability, etc (cylinders, slump), properties of fresh and hardened concrete (strength, serviceability, creep, shrinkage, durability), concrete plant arrangements, concrete transport, placing, reinforcement, curing, pumping, spraying, cement grouting. Formwork for concrete. Steel: types and applications, material standards, fabrication, paint coatings and corrosion protection, delivery and erection. Timber: strength and serviceability properties, effects of microstructure and moisture content (hardwoods, softwoods, grain, gum, chemical constituents, etc), decay / weathering and protection, typical applications, fire resistance. Other materials: overview of properties and applications of masonry, aluminium, glass and selected plastics. Introduction to construction equipment/techniques including use of excavators, dredges, shotting, pumping and dewatering plant, pile drivers, scaffolding and Falsework, winches, cranes, cableways and haulage units. Construction sites: site establishment and facilities required, introduction to OHS & issues. Many of the topics above will be related to case studies on projects such as buildings, bridges, roads, tunnels and dams.

Credit Points: 12

Learning Outcomes: Upon successful completion of this subject, students will be able to demonstrate

- A broad understanding of the types, properties and applicability of materials most commonly used in civil and building engineering construction work.
- A broad knowledge of the type, properties and applications of plant and equipment which could typically be used in a variety of civil and building engineering construction processes.
- A broad knowledge of construction techniques which could be used in a variety of projects.
- An ability to make a reasonable choice of materials, plant, equipment and construction techniques for one or more specific projects.
- An ability, within the context of the subject areas above, to find and use relevant information, to formulate and solve specific problems, to work both autonomously and as a member of a team.

Class Contact: 5 hrs equivalent per week of sessions made up of small group work, team meetings, workshops, seminars, laboratory sessions and site visits. In addition, students are expected to devote at least this much time for private and/or group study.

Required Reading: None Required

Assessment: An individual portfolio which provides evidence that demonstrates that the learning outcomes have been achieved. The portfolio may include skills audits, laboratory reports, site visit / project reports, reflective journals, workbooks, self and peer assessment.

VAC2023 HYDRAULICS

Locations: Footscray Park,

Pre-requisites: VAN2041 Thermofluids

Descriptions: Fluid resistance and boundary layers; Development of pipe friction equations and their use. Fluid flow through pipelines; inter-reservoir pipeline flow, branching pipelines, parallel pipelines; Pumps - positive displacement and rotodynamic systems. Pump performance equations, affinity laws and specific speed. Pump selection for particular duties; Flow in open channels - fundamentals (continuity, energy and momentum equations), discharge equations, specific energy and critical depth relationships, flow transitions and weirs and flumes. Gradually varied flow and water surface profiles. Introduction to unsteady flow condition.

Credit Points: 12

Learning Outcomes: To be advised.

Class Contact: three hrs of lectures and two hrs of tutorials/ laboratory sessions per week.

Required Reading: None Required

Assessment: Assignment 1: site investigations (1500 words), 10%; Assignment 2: based on self selected site visit in week 9 (Report, photographs, sketches, max word limit of 1500), 10%; Tests (3 x 1hr in wks 4, 7 & 11), 30%; three hour examination, 50%.

VAC2071 SURVEYING

Locations: Footscray Park,

Pre-requisites: Nil

Descriptions: Surveying Reference and Basic Computations, Mapping, Vertical Measurement and Note Keeping, Angular Measurement and Note Keeping, Circular Curves, Contours and Contouring, Area Computations for Polygons, Rectangular co-ordinates, Computations for Earth Works, Digital Terrain Models, Geographic Positioning Systems, Victorian Land Title System.

Credit Points: 12

Learning Outcomes: To be advised.

Class Contact: To be advised.

Required Reading: None Required

Assessment: Field work/tutorials 1: Basic Survey Computations (Max. 500 words), 5%; Field work/tutorials 2: Mapping (Max. 500 words), 5%; Field work/tutorials 3: Transfering a level to determine RL of a point (Max. 500 words), 5%; Field work/tutorials 4: Level traverse to determine RL of many points (Max. 500 words), 5%; Field work/tutorials 5: Determining angles in horizontal plane (Max. 500 words), 5%; Field work/tutorials 6: Circular curve set out (Max. 500 words), 5%; Field work/tutorials 7: Grid levelling and contouring (Max. 500 words), 5%; Field work/tutorials 8: Area and perimeter computations using co-ordinates (Max. 500 words), 5%; two hour examination, 60%; Students are required to pass both Field Work and Examination to receive a pass in the subject.

VAC2072 HIGHWAY ENGINEERING

Locations: Footscray Park,

Pre-requisites: Nil

Descriptions: Earthworks including equipment, determination of quantities and costs; preparation and use of mass haul diagrams. Route location factors, route selection, horizontal alignment including circular curves and transition curves and super-elevation, determination of sight distance, vertical alignment including grades and vertical curves. Pavement design methods for both flexible and rigid pavements, determination of number of equivalent standard axles, use of California Bearing Ratio. Road construction equipment capabilities. Introduction to road drainage methods, surface and subsurface drainage. Road maintenance issues and programs.

Credit Points: 12

Learning Outcomes: To be advised.

Class Contact: three hrs of lectures and two hrs of tutorials/site visits per week.

Required Reading: None Required

Assessment: Austroads (1993), Rural Road Design 7th edn; Class Notes.

Assessment: Assignment 1: site investigations (1500 words), 10%; Assignment 2: geometric standards and super elevation (Calculations & drawings equivalent to approx. 2000 words), 10%; Assignment 3: pavement design (Calculations & drawings equivalent to approx. 2000 words), 10%; three hour examination, 70%.

To be advised.
VAC3021 STRUCTURAL ANALYSIS

Locations: Footscray Park,


Descriptions: Virtual Work method of structural analysis: Deflections and rotations of statically determinate trusses, beams and frames; The stiffness method of structural analysis; Solution of redundant beams and frames by equations of slope deflection; The effect of axial force on flexural stiffness; Stiffness analysis using matrices for determinate and indeterminate plane trusses and frames. The flexibility method of structural analysis: Solution of redundant beams and frames. Qualitative and approximate analyses of structures: Use with computer analysis programs to appraise results; Ultimate load (‘plastic’) method of analysis of beams and frames; Frame stability analysis and buckling.

Credit Points: 12

Learning Outcomes: To be advised.

Class Contact: three hrs of lectures and two hrs of tutorials per week


Assessment: Stage test: Based on weeks 1-6, 10%; Homework submissions: Based on 5 from 12 weeks, 5%; Assignment 1: Structural modal design/making/testing/reporting (3000 words equivalence), 20%; Assignment 2: Computer structural analysis, 15%; three hour examination, 50%.

VAC3031 CIVIL ENGINEERING DESIGN 1

Locations: Footscray Park,

Pre-requisites: VAC 2072 Highway Engineering, VAC2042 Hydraulics.

Descriptions: This unit of study aims to give students design skills in several areas of civil engineering, and to further develop a range of more generic skills including teamwork and communication. Students will work in small design teams to carry out (typically) four designs drawn mainly from the areas of water and road engineering. Each design will involve analysis, calculations and preparation of engineering drawings. Two designs will have associated with them an individual writing task of about 800 words on aspects relating to the design. Students must also prepare and deliver one oral presentation on one of the designs or associated written tasks performed during the semester.

Credit Points: 12

Learning Outcomes: Upon successful completion of this unit, students will have demonstrated:

- an understanding of how to approach a range of simple civil engineering design problems
- ability to perform preliminary designs in a number of civil engineering disciplines
- an ability to evaluate design solutions against a range of technical and other criteria
- a number of generic skills including problem identification / formulation / solution, effective communication, ability to work as a member and/or leader of a small team, ability to use a system approach to design, and capacity to undertake life-long learning.

Class Contact: This unit will be delivered in PBL mode, and will comprise 60 hours of sessions made up of small group work, team meetings, lectures, workshops, seminars, practical work and site visits. In addition, students are expected to devote at least the same amount of time for private and/or group work on the design projects. The unit is worth 12 credit points.

Required Reading: Class Notes and texts appropriate for each design.

Assessment: Based 100% on an individual portfolio which documents evidence that the learning outcomes have been achieved. The portfolio may include skills audit results, design reports including technical calculations, but may also include a reflective journal, workbook(s), and self and peer assessment. Further details on portfolio components will be issued to students during the first week of classes.

VAC3041 HYDROLOGY AND WATER RESOURCES

Locations: Footscray Park,

Pre-requisites: VAC2042 Hydraulics.


Credit Points: 12

Learning Outcomes: Upon successful completion of this unit, students will have demonstrated:

- an ability to apply basic principles of hydraulics and hydrology in a range of water-related projects
- recognition of the importance of social objectives, environmental issues and sustainability concepts in various catchment management and water engineering design projects
- an ability to evaluate solutions against technical, environmental, economic and social criteria.
- an ability to work effectively as a member and/or leader of a team, and to time manage multiple tasks.
- good communication skills, based on technical reports and oral presentations.

Class Contact: This unit will be delivered in PBL mode, and will comprise 60 hours of sessions made up of small group work, team meetings, lectures, workshops, seminars, practical work and site visits. In addition, students are expected to devote at least the same amount of time for private and/or group study. The unit is worth 12 credit points.


Assessment: Based 100% on an individual portfolio which documents evidence that the learning outcomes have been achieved. The portfolio may include skills audit results, assignment / project reports including technical calculations, site visit and/or laboratory reports, a reflective journal, workbook(s), and self and peer assessment. Further details on portfolio components will be issued to students during the first week of classes.

VAC3042 HYDRAULIC ENGINEERING

Locations: Footscray Park,

Pre-requisites: VAC 2042 Hydraulics.

Descriptions: This unit of study aims to give students basic understanding, problem solving and design skills in the areas of water supply and irrigation engineering. It covers the following topics: Urban Water Supply Schemes: Demand assessment and management, supply sources, dam types/spillways/outlet works/
construction and safety issues, groundwater development works, water quality requirements and various types of treatment to satisfy these, service storage, pumping stations, reticulation system arrangements/layout and manual/computer analysis, pipeline design and construction Irrigation: Purpose and principles of irrigation, irrigation water quality, channel design and structures, flood, furrow, sprinkler and trickle irrigation layout and design principles

Credit Points: 12
Learning Outcomes: Upon successful completion of this unit, students will have demonstrated:

- an understanding of key issues and design principles involved in urban water supply / treatment systems and irrigation works
- an ability to locate and effectively use information / data relevant to these areas.
- an ability to identify, formulate and solve related problems, and to carry out associated design work.
- an ability to evaluate solutions against technical, environmental, economic and social criteria.
- an ability to work effectively as a member and/or leader of a team, and to time manage multiple tasks.
- good communication skills, based on technical reports and oral presentations.

Class Contact: This unit will be delivered in PBL mode, and will comprise 60 hours (5 hours equivalent per week) of sessions made up of small group work, team meetings, lectures, workshops, seminars, practical work and site visits. In addition, students are expected to devote at least the same amount of time for private and/or group study. The unit is worth 12 credit points.


Assessment: Based 100% on an individual portfolio which documents evidence that the learning outcomes have been achieved. The portfolio may include skills audit results, assignment / project reports including technical calculations, site visit and/or laboratory reports, a reflective journal, workbook(s), and self and peer assessment. Further details on portfolio components will be issued to students during the first week of classes.

VAC3061 GEOMECHANICS

Locations: Footscray Park,
Pre-requisites: VAN 1022 Solid Mechanics 1

Credit Points: 12
Learning Outcomes: To be advised.
Class Contact: three hrs of lectures and two hrs of tutorials/laboratory work per week
Required Reading: Smith, I. (2006) Elements of Soil Mechanics, 8th edn, Blackwell Science; Class Notes

Assessment: Assignment 1: Report based on field geological /soils investigation (calculations, sketches, max word limit 2000), 15%; Assignment 2: Lab/practical work report on soil testing (calculations, sketches, max word limit 1000), 5%; Assignment 3: Solution of geotechnical problems (calculations, sketches, max word limit 1500), 10%; 0.5 hr Test On material covered in weeks 1-5, 10%; three hour examination, 60%.

VAC3062 GEOTECHNICAL ENGINEERING

Locations: Footscray Park,
Pre-requisites: VAC 3061 Geomechanics

Credit Points: 12
Learning Outcomes: To be advised.
Class Contact: three hrs of lectures and two hrs of tutorials/laboratory work per week
Required Reading: Smith, I. (2006) Elements of Soil Mechanics, 8th edn, Blackwell Science; Class Notes

Assessment: Assignment 1: Report based on field investigation of foundations (calculations, sketches, max word limit 2000), 15%; Assignment 2: Solution of geotechnical problem (calculations, sketches, max word limit 1000), 5%; Assignment 3: Solution of geotechnical problems (calculations, sketches, max word limit 1500), 10%; 0.5 hr Test On material covered in weeks 1-5, 10%; three hour examination, 60%.

VAC3092 STRUCTURAL DESIGN

Locations: Footscray Park,
Pre-requisites: VAN2032 - ENGINEERING DESIGN
Descriptions: This unit of study aims to give students a basic understanding, problem solving and design skills in the areas of structural design using timber, steel and reinforced concrete. It covers the following topics: Dead and live loads. Timber beams and columns. Nailed and bolted connections in timber members in simple shear. Steel beams, steel girders with high shear forces, steel columns, bolted and welded connections in steel members. Reinforced concrete design for simple and continuous beams. Beam bending, deflection and shear. Single and double reinforcement in beams. Reinforced concrete column design.

Credit Points: 12
Learning Outcomes: Upon successful completion of this unit, students will have demonstrated:

- an understanding of key issues and design principles involved in basic structural design using timber, steel and reinforced concrete
- an ability to locate and effectively use information / data relevant to this area.
- an ability to identify, formulate and solve related problems, and to carry out associated design work.
- an ability to evaluate solutions against technical, environmental, economic and social criteria.
• an ability to work effectively as a member and/or leader of a team, and to time
managing multiple tasks.

• good communication skills, based on technical reports and oral presentations.

Class Contact: This unit will be delivered in PBL mode, and will comprise 60 hours
(5 hours equivalent per week) of sessions made up of small group work, team
meetings, lectures, design workshops, seminars, practical work and site visits. In
addition, students are expected to devote at least the same amount of time for
private and/or group study. The unit is worth 12 credit points.

Required Reading: Gorenc, B. Tinyou, R. and Syam, A. (1996), Steel Designers
Standards Association of Australia; Warner, R.F., Rangan, B.V., Hall, A.S. and Faulkes,
(2002), Standards Association of Australia; AS1720.1 - 1997, Australian Standard -
Timber Structures - Part 1: Design Methods,’ Standards Australia; Class Notes.

Assessment: Based 100% on an individual portfolio which documents evidence
that the learning outcomes have been achieved. The portfolio may include skills
audit results, design assignment / project reports including technical calculations,
site visits, a reflective journal, workbook(s), and self and peer assessment. Further
details on portfolio components will be issued to students during the first week of
classes.

VAC4021 STRUCTURAL ENGINEERING ANALYSIS AND DESIGN 1

Locations: Footscray Park,

Pre-requisites: VAC3092 Structural Design

Descriptions: Analysis: Plastic Analysis/Design of Steel Frames - Stress-strain curve
for steel, moment-curvature relationship, plastic modulus of section. Mechanisms
for failure of beams and frames, yield and equilibrium conditions. Load factor.
Upper and lower bound theorems. Combined bending and axial loads.Buckling of
elastic structures - Introduction, Euler load, buckling modes, long and short columns,
effective length, slenderness ratio; theoretical and practical columns, secant formula;
tangent modulus and secant modulus methods. Practical techniques for solving
buckling problems. Australian standards relevant for design of columns. Buckling
of plates: Design: Wind loads. Design of a steel portal frame building: cladding,
secondary ‘cold formed’ members, framing systems for low-rise buildings, roof
and wall bracing, computer analysis, rafters, columns, connections, knee and splice
connections, and ‘plastic’ design of steel frames. Reinforced concrete elements:
continuous beams, slender columns, slabs: method of coefficients, yield line analysis
and design, strip method, equivalent frame.

Credit Points: 12

Learning Outcomes: To be advised.

Class Contact: three hrs of lectures and two hrs of tutorials per week.

Association of Australia; Warner, R.F., Rangan, B.V., Hall, A.S. and Faulkes, K.A.
Standards Association of Australia; ‘WebCT’ VU web site for this subject and class
notes.

Assessment: Analysis Part: Stage test: Based on weeks 1-6, 25%; Assignment 1:
Structural computer analysis (Calculations, sketches, max equivalent word limit of
1500), 40%; one hour examination, 40%.Design part: three hour mid-semester
supervised assignment, 40%.This assessment will be largely open-book. The
assignment will be done under supervision to control plagiarism. (Calculations,
sketches, max word limit of 1500); 2 hour examination, 60%; Subject final result
derived from weightings = 60% to Design part and 40% to Analysis part.

VAC4022 STRUCTURAL ENGINEERING ANALYSIS AND DESIGN 2

Locations: Footscray Park,

Pre-requisites: VAC4021 Structural Engineering Analysis & Design 1.

Descriptions: The analysis topics include the basic concepts of finite element
analysis. Element stiffness matrix and mass matrix. Element assembly and solution
for unknowns. Analysis of 2D and 2D structures using a commercial finite element
analysis package such as STRAND or ANSYS. The design topics comprise simply
supported beams. Basic methods including load-balancing, crack control and full
Anchorage zones. Continuous beams both rectangular and I-shaped. Primary and
secondary reactions. Concordant tendons and transformations. Slab systems.

Credit Points: 12

Learning Outcomes: To be advised.

Class Contact: three hrs of lectures and two hrs of tutorials per week.

Required Reading: Cook, R.D., Malkus, D.S., Plesha, M.E. and Witt, R.J. (2001),
Concepts and Applications of Finite Element Analysis, 4th edition, John Wiley &
Sons, New York; Clough, R.W. and Penzien, J. (2003), Dynamics of Structures, 2nd
Standards Association of Australia; Class Notes.

Assessment: Analysis part: Stage test: Based on weeks 1-6, 20%; Assignment 1:
Computer structural analysis (Calculations, sketches, max equivalent word limit of
1500), 40%; one hour examination, 40%.Design part: three hour mid-semester
supervised assignment, 40%.This assessment will be largely open-book. The
assignment will be done under supervision to control plagiarism. (Calculations,
sketches, max word limit of 1500); 2 hour examination, 60%; Subject final result
derived from weightings = 60% to Design part and 40% to Analysis part.

VAC4032 CIVIL ENGINEERING DESIGN 2

Locations: Footscray Park,

Pre-requisites: VAC3031 - CIVIL ENGINEERING DESIGN 1

Descriptions: This unit aims to broaden students’ design skills in several areas of
civil engineering and to further develop a range of more generic skills including
teamwork and communication. Students will work in small design teams to carry out
(typically) four designs drawn mainly from the areas of water, geotechnical, and
transportation engineering. Designs will typically involve analysis, calculations
and preparation of engineering drawings. Two designs will have associated with them
an individual writing task of about 800 words on aspects relating to the design.
Students must also prepare and deliver one oral presentation on one of the designs
or associated written tasks performed during the semester.

Credit Points: 12

Learning Outcomes: On successful completion of this unit, it is expected that
students will be able to:

• have developed an understanding of how to approach a simple civil engineering
  design problem

• be able to perform preliminary designs in a number of civil engineering
disciplines

• have completed work designed to improve a number of generic skills including
  problem identification / formulation / solution, effective communication,
  working in small teams, ability to use a system approach to design, and
  capacity to undertake life-long learning.

Class Contact: This unit will be delivered in PBL mode, and will comprise 60 hours
(5 hours equivalent per week) of sessions made up of design workshop / seminars and
student team design work. In addition, students are expected to devote at least the
same amount of time for private and/or group work on the design projects. The unit
is worth 12 credit points.
Required Reading: Class Notes and texts as required for each of the prerequisite units relating to the specific designs being undertaken.

Assessment: Based 100% on an individual portfolio which documents evidence that the learning outcomes have been achieved. The portfolio will normally include skills audit results and design reports including technical calculations, but may also include a reflective journal, workbook(s), and self and peer assessment. Further details on portfolio components will be issued to students during the first week of classes.

VAC4071 TRANSPORTATION ENGINEERING

Locations: Footscray Park,
Pre-requisites: Nil.

Descriptions: Demand for transport and the significance of transport and freight movement to the economy; road safety issues; transport planning techniques including trip generation, trip distribution, mode split and trip assignment models. Traffic engineering aspects - flow theory; road capacity; headways; gaps; speed analysis. Intersection analysis: use of SIDRA program to aid design and analysis of signalised intersections; traffic survey methods and analysis; local area traffic management studies; travel demand management.

Credit Points: 6
Learning Outcomes: To be advised.

Class Contact: two hrs of lectures and one hr of tutorials per week.


Assessment: Assignment 1: Site Investigations Report (2000 words), 15%; Assignment 2: Trip generation and trip distribution (Calculations & analysis equivalent to approx. 6 pages), 15%; three hour examination, 70%.

VAC4072 ENVIRONMENTAL PLANNING AND DESIGN

Locations: Footscray Park,
Pre-requisites: Nil.

Descriptions: This subject covers areas of sustainable rural and urban land development including biophysical and socio-economic data collection and inventories, environmental sensitivity mapping and land capability analysis, green city/urban forest concepts, planning permit issues and processes including meeting procedure, open space concepts and energy and water conservation, residential subdivisions and appropriate street designs.

Credit Points: 6
Learning Outcomes: To be advised.

Class Contact: two hrs of lectures and one hr of tutorials per week.

Required Reading: Victoria, Dept. of Infrastructure , 2001, Victoria Planning Provisions (incorporating Rescode); Class Notes.

Assessment: Assignment 1: Land development suitability report 1500 words plus sketches, 16%; Assignment 2: Planning meeting report - 1200 words, 10%; Assignment 3: Subdivision and street design - calculations and engineering drawing equivalent to approx.12 pages, 24%; 1.5 hour examination, 50%.

VAC4081 ENVIRONMENTAL ENGINEERING 1

Locations: Footscray Park,
Pre-requisites: VAC 2042 Hydraulics.


Credit Points: 12
Learning Outcomes: To be advised.

Class Contact: three hrs of lectures and two hrs of tutorials per week.


Assessment: Assignment 1: Report based on material covered in weeks 1-5 (calculations, sketches, max word limit 2000), 15%; Assignment 2: Site visit report (max word limit of 1000), 5%; Assignment 3: Report based on material covered in weeks 6-11 (calculations, sketches, max word limit 1500), 10%; 0.5 hr Test (On material covered in weeks 1-6), 10%; three hour examination, 60%.

VAC4082 ENVIRONMENTAL ENGINEERING 2

Locations: Footscray Park,
Pre-requisites: Nil.


Credit Points: 12
Learning Outcomes: To be advised.

Class Contact: three hrs of lectures and two hrs of tutorials per week.

Required Reading: Class Notes.

Assessment: Assignment 1: Report based on material covered in weeks 3-6 (calculations, sketches, max word limit 1500), 10%; Assignment 2: Report based on material covered in weeks 7-9 (calculations, sketches, max word limit 1500), 10%; Assignment 3: Site visit report (max word limit 1500), 10%; 0.5 hr Test (On material covered in weeks 1-6), 10%; three hour examination, 60%.

VAC4091 STRUCTURAL ENGINEERING DESIGN 1

Locations: Footscray Park,
Pre-requisites: VAC3092 Structural Design.


Credit Points: 6
Learning Outcomes: To be advised.

Class Contact: two hrs of lectures and one hr of tutorials per week.

Required Reading: Gorenc, B. Tinyou, R. and Syam, A. (1996) Steel Designers...
VAM2042 THERMODYNAMICS AND FLUID MECHANICS 1

Locations: Footscray Park,
Pre-requisites: VAN2041 Thermofluids.


Credit Points: 12

Learning Outcomes: To be advised.

Class Contact: three hrs of lectures and two hrs of tutorial/laboratory sessions per week.


Assessment: Class Test: based on weeks 1-6 (calculations, sketches, max word limit of 1000 words), 10%; Class Test: based on weeks 6-12 (calculations, sketches, max word limit of 1000 words), 10%; Assessment 3: Lab on Venture tube (calculations, sketches, max word limit of 1000 words), 10%; Assessment 4: Lab on refrigeration unit (calculations, sketches, max word limit of 1000 words), 10%; Final Exam: 3hrs, 60%.

VAM2062 MATERIALS AND MANUFACTURE

Locations: Footscray Park,
Pre-requisites: VAN2061 Engineering Materials.


Credit Points: 12

Learning Outcomes: Upon successful completion of this subject, students will be able to demonstrate:

• an understanding of processes and key issues related to engineering science in manufacturing and environment.

• an ability to solve a range of numerical engineering problems found in engineering practice and engineering design.

• an ability, within the context of the subject areas above, to find and use relevant information, to formulate and solve specific problems, to work both autonomously and as a member of a team, and to effectively communicate ideas, issues, investigations and results by a variety of methods.

Class Contact: 5 hrs equivalent per week of sessions made up of small group work, team meetings, workshops, seminars and laboratory sessions. In addition, students are expected to devote at least this much time for private and/or group study.

Assessment: An individual portfolio which provides evidence that demonstrates that the learning outcomes have been achieved. The portfolio may include skills audits, laboratory reports, site visit / project reports, reflective journals, workbooks, self and peer assessment.

VAM3012 SIGNAL ANALYSIS
Locations: Footscray Park,
Pre-requisites: VAM2011 Computation and Engineering Analysis.
Descriptions: This unit of study aims to give students an understanding of the principles of modern signal measurement and analysis with applications to mechanical engineering. It relies heavily on the development of computer algorithms and the use of specialist engineering software, and covers the following topics. Engineering measurement theory and fundamentals. Instrumentation and sensors for mechanical processes. Dynamic response of measurement systems. Data acquisition systems: analogue-to-digital converters, quantisation. Shannon’s sampling theorem. Aliasing. Anti-aliasing filters. Use of data acquisition and analysis software: Matlab®, DADSP®, HPVee®, Data file manipulation. Signal classification: Static, transient and dynamic signals, deterministic signals, random signals, non-stationary signals. Analysis and interpretation of digital experimental data: Time domain analysis: trends, RMS, moving statistics (mean, RMS), synchronous averaging, transient (shock) signals, probability distribution statistical estimates. Frequency domain analysis: Fast Fourier Transform (FFT), frequency spectra, spectrum types and scales. Frequency response functions, coherence, signal-to-noise ratio. Introduction to wavelet transforms. The projects involve applications such as shocks and vibrations, noise contaminated signals, acoustic signals and other physical phenomena relating to modern mechanical engineering.

Credit Points: 12
Learning Outcomes: Upon successful completion of this unit, students will have:
- developed an understanding of processes and key issues related to modern measurement and signal analysis principles and techniques relating to mechanical engineering practice.
- demonstrated an ability to solve a wide range of problems and carry out design tasks pertaining to sensor selection and evaluation, and develop computer algorithms for a wide range of signal analysis techniques in the time and the frequency domains.
- completed work designed to improve a number of generic skills including problem identification / formulation / solution, effective oral and written communication, experimental techniques, computer skills and the ability to use a systematic approach to engineering investigation and algorithm development, as well as a capacity to undertake life-long learning.

Class Contact: This unit will be delivered in PBL mode and based on up to three projects to be undertook by students working in teams. It will comprise 60 hours (5 hours equivalent per week) of lectures, tutorials, laboratory/field work, workshops and small group project work. In addition, students are expected to devote at least the same amount of time for private and/or group study. The unit is worth 12 credit points.


Assessment: Based 100% on an individual portfolio which documents evidence that the learning outcomes have been achieved. The portfolio may include skills audit results, assignment / project reports including technical calculations, laboratory reports, a reflective journal, workbook(s), and self and peer assessment. Further details on portfolio components will be issued to students during the first week of classes.
• significant knowledge and competence in the application of fundamental mechanics and scientific skills to design and selection of mechanical elements.

• development of skills to identify, formulate and solve engineering design problems in a systematic way.

• an ability to use computing methods to solve mechanical engineering design problems.

• ability to work effectively as a member and/or leader of a team and to time manage multiple tasks

• ability to use mechanical engineering design skills to solve a plant design problem experienced in industry.

Class Contact: This unit will be delivered in PBL mode, and will comprise 60 hours (5 hours equivalent per week) of sessions made up of small group work, team meetings, lectures, workshops, seminars and computing work. In addition, students are expected to devote at least the same amount of time for private and/or group study. The unit is worth 12 credit points.


Assessment: Based 100% on an individual portfolio which documents evidence that the learning outcomes have been achieved. The portfolio may include skills audit results, assignment / project reports including technical calculations, design software development work, a reflective journal, and self and peer assessment. Further details on portfolio components will be issued to students during the first week of classes.

VAM3041 THERMODYNAMICS AND FLUID MECHANICS 2

Locations: Footscray Park,
Pre-requisites: VAM2042 Thermodynamics and Fluid Mechanics 1.

Descriptions: Availability analysis and second law efficiency of Thermodynamics. Cannot engines. Gas power cycles - the Otto cycle, Diesel cycle, gas-turbine cycle, and jet-propulsion cycle. Vapor and combined power cycles - Rankine cycle, using reheats and regeneration to improve the efficiency of the Rankine cycle. Introduction to viscous flows. Laminar and turbulent flows. Detail analysis of wall shear flows (pipe and boundary layer) and free shear flows (jets and wakes).

Credit Points: 12

Learning Outcomes: To be advised.

Class Contact: three hrs of lectures and two hrs of tutorial laboratory sessions per week.


Assessment: Class Test: based on weeks 1 - 6 (calculations, sketches, max word limit of 1000 words), 10%; Class Test: based on weeks 6 - 12 (calculations, sketches, max word limit of 1000 words), 10%; Assessment 3: Lab on external flows (calculations, sketches, max word limit of 1000 words), 10%; Assessment 4: Lab on Engine (calculations, sketches, max word limit of 1000 words), 10%; Final Exam: 3hrs, 60%.

VAM3071 DYNAMICS

Locations: Footscray Park,
Pre-requisites: RMA1002 Engineering Mathematics 1B and REP1003 Engineering Physics 1C.

Descriptions: This unit of study aims to give students an understanding of principles of engineering dynamics including particle dynamics and rigid body dynamics (kinematics and kinetics) in two and three dimensional space, as well as to develop problem solving, computing and design skills in the areas of mechanism design and analysis. It covers the following topics. Introduction to dynamics, Kinematics of particles - rectilinear and plane curvilinear motion co-ordinates systems, 3-D curvilinear motion and relative motion. Plane kinematics of rigid bodies - rectilinear and plane curvilinear motion, relative velocity, instantaneous centre of zero velocity, relative acceleration, space curvilinear motion. Kinetics of particles - Newton’s law, work and energy, impulse and momentum. Plane kinetics of rigid bodies - moments and products of inertia, Newton’s law, work and energy, impulse and momentum. Three-dimensional dynamics of rigid bodies - kinematics, kinetics, gyroscopic motion.

Credit Points: 12

Learning Outcomes: Upon successful completion of this unit, students will have:

• developed an understanding of processes and key issues related to particle dynamics and rigid body dynamics in two and three-dimensional space

• demonstrated an ability to solve a wide range of numerical problems and carry out design tasks on kinematics of particles, plane kinematics of rigid bodies, kinetics of particles, plane kinetics of rigid bodies and three-dimensional kinematics and kinetics of rigid bodies.

• completed work designed to improve a number of generic skills including problem identification / formulation / solution, effective oral and written communication, experimental techniques, computer skills and the ability to use a systematic approach to design, and a capacity to undertake life-long learning.

Class Contact: This unit will be delivered in PBL mode, and will comprise 60 hours (5 hours equivalent per week) of sessions made up of small group work, team meetings, lectures, workshops, seminars and laboratory work. In addition, students are expected to devote at least the same amount of time for private and/or group study. The unit is worth 12 credit points.


Assessment: Based 100% on an individual portfolio which documents evidence that the learning outcomes have been achieved. The portfolio may include skills audit results, assignment / project reports including technical calculations, laboratory reports, a reflective journal, workbook(s), and self and peer assessment. Further details on portfolio components will be issued to students during the first week of classes.

VAM3072 MECHANICAL VIBRATIONS

Locations: Footscray Park,
Pre-requisites: RMA1002 Engineering Mathematics 1B and REP1003 Engineering Physics 1C.

Descriptions: This unit of study aims to give students a basic understanding of problem solving and design skills in Mechanical Vibrations. It covers the following topics: Introduction to mechanical vibrations and vibratory elements; Single Degree of Freedom Systems - free vibrations of undamped systems, free vibrations with viscous, coulomb and hysteretic damping, harmonically excited vibrations of undamped systems, response of damped systems to harmonically forced excitation and base motion, response of damped systems, equivalent viscous damping, general forcing functions; Two Degree of Freedom Systems - free vibrations of undamped systems, co-ordinate coupling, forced vibrations; Multi Degree of Freedom Systems - influence coefficients, Eigenvalue problem, determination of natural frequencies and mode shapes; vibration measurement, vibration control, random vibration analysis, random vibration simulation.

Credit Points: 12

Learning Outcomes: Upon successful completion of this unit, students will have demonstrated:

• an understanding of key issues involved in the vibratory analysis of mechanical systems.
• an ability to identify, formulate and solve related problems, and to carry out associated design work.

• an ability to evaluate solutions against technical, environmental, economic and social criteria.

• an ability to work effectively as a member and/or leader of a team, and to time manage multiple tasks.

• good communication skills, based on technical reports, discussions and debates.

Class Contact: This unit will be delivered in PBL mode and based on up to three projects to be undertaken by students working in teams. It will comprise 60 hours (5 hours equivalent per week) of lectures, tutorials, laboratory/field work, workshops and small group project work. In addition, students are expected to devote at least the same amount of time for private and/or group study. The unit is worth 12 credit points.


Assessment: Based 100% on an individual portfolio which documents evidence that the learning outcomes have been achieved. The portfolio may include skills audit results, assignment / project reports including technical calculations, laboratory reports, a reflective journal, workbook(s), and self and peer assessment. Further details on portfolio components will be issued to students during the first week of classes.

Learning Outcomes: On successful completion of this unit, it is expected that students will:

• have developed an understanding of standard problem formulation for optimisation.

• have developed a working knowledge of graphical, analytical and numerical optimisation procedures.

• have learned the fundamental concepts of : quantifying quality in design, designing for quality, and design and assessment experimental optimisation procedures.

Class Contact: This unit will be delivered in PBL mode, and will comprise 60 hours (5 hours equivalent per week) of sessions made up of lectures, design workshop / seminars and student team design work. In addition, students are expected to devote at least the same amount of time for private and/or group work on the design projects. The unit is worth 12 credit points.

Required Reading: Semercigil, E., VAM4032 Lecture notes.

Assessment: Based 100% on an individual portfolio which documents evidence that the learning outcomes have been achieved. The portfolio will normally include skills audit results and design reports including technical calculations, but may also include a reflective journal, workbook(s), and self and peer assessment. Further details on portfolio components will be issued to students during the first week of classes.

VAM4021 COMPUTATIONAL MECHANICS

Locations: Footscray Park,

Prerequisites: VAM302 Stress Analysis 2, VAM3072 Mechanical Vibration.


Credit Points: 12

Learning Outcomes: To be advised.

Class Contact: 5 hrs of lectures and tutorials per week for 12 weeks, including computer based laboratory using software.

Required Reading: Lecture Notes.


VAM4032 MECHANICAL ENGINEERING DESIGN 2

Locations: Footscray Park,

Prerequisites: VAM3031 Mechanical Engineering Design 1.

Descriptions: This unit aims to broaden students' design skills in several areas of mechanical engineering and to further develop a range of more generic skills including teamwork and communication. Students will generally work in small design teams to carry out projects relating to introductory design for optimisation, graphical optimisation, analytical and numerical search methods, linear programming, design for quality and Taguchi principles, and experimental optimisation.

Credit Points: 12

VAM4041 HEAT TRANSFER AND COMBUSTION

Locations: Footscray Park,

Prerequisites: VAM3041 Thermodynamics and Fluid Mechanics 1.


Credit Points: 12

VAM4042 FLUID DYNAMICS

Locations: Footscray Park,

Prerequisites: VAM3041 Thermodynamics and Fluid Mechanics 2.

Descriptions: An introduction to the power of computational fluid dynamics. Continuous equations and their discretised form. Solution of one-dimensional

Credit Points: 12
Learning Outcomes: To be advised.
Class Contact: two hrs of lectures and three hrs of tutorials per week.
Assessment: Assignment 1: based on weeks 1-3, 15%; Assignment 2: based on weeks 1-6, 15%; Assignment 3: based on weeks 1-9, 20%; Assignment 4: based on weeks 1-12, 20%; Assignment 5: based on weeks 1-12, 30%; The assessment tasks will demonstrate that students are capable of presenting sustained intellectual arguments. Some of the arguments take the form of narratives, whilst some of the arguments will be intensely mathematical, but illustrative of the narratives. It is expected that the written work will be based on rational argument and it will not be based on dubious ways of knowing and epistemologies. It is anticipated that students will be able to celebrate the achievements of scientific method over primitive myths. Each assessment task will be 500-1000 words.

VAM 4062 MANUFACTURING AND POLYMERIC TECHNOLOGIES

Locations: Footscray Park,
Pre-requisites: VAM 2062 Materials and Manufacturing.
Credit Points: 12
Learning Outcomes: To be advised.
Class Contact: four hrs of lectures (common tutorials, site visits) and one hr of tutorials and laboratory classes per week.
Assessment: Test 1 in week 5, 10%; Test 2 in week 11, 10%; Laboratory Reports and Assignments. Students are required to achieve a minimum of 40% in these assessment tasks to successfully complete the subject. Assignments and laboratory reports have a limit of 2500 words (excluding diagrams, graphs, appendices and bibliography), 25%; three hour examination, 55%.

VAM 4072 ADVANCED MECHANICS

Locations: Footscray Park,
Pre-requisites: VAM 4021 Computational Mechanics.
Credit Points: 12
Learning Outcomes: To be advised.
Class Contact: 5 hours of lectures and tutorials per week for 12 weeks, including experiments and computer-based laboratory.
Required Reading: Lecture notes.

VAM 4082 AUTOMOTIVE ENGINES, ENERGY AND ENVIRONMENT

Locations: Footscray Park,
Pre-requisites: VAM 3041 Thermodynamics.
Credit Points: 12
Learning Outcomes: To be advised.
Class Contact: 60 hours in one semester comprising lectures, tutorials and practical laboratory sessions.
Assessment: Test 1: based on weeks 1-6 (calculation, sketch and maximum 1500 words), 15%; Test 2: based on weeks 6-12 (calculation, sketch and maximum 1500 words), 15%; Written laboratory reports, assignment and presentation (calculation, sketch and maximum 2000 words), 20%; Final Exam: three hours, 50%.

VAM 4092 TRANSPORTATION AND PACKAGING DYNAMICS

Locations: Footscray Park,
Pre-requisites: VAM 4072 Mechanical Vibrations
Credit Points: 12
FACULTY OF HEALTH, ENGINEERING AND SCIENCE

Learning Outcomes: Upon satisfactory completion of the subjects students should have a good understanding of key principles underpinning the design of protective packaging for transportation, be familiar with experimental techniques relevant to performance testing of packaging and be equipped with specialist knowledge relevant to seeking employment in this field.

Class Contact: 60 hours in one semester comprising lectures, tutorials and practical laboratory sessions.


Assessment: Test 1 - 90 minutes based on weeks 1- 5A written laboratory report on package performance testing - calculations, figures and diagrams, discussion (max 1000 words) 15%Essay on an aspect of modern packaging/transportation technology (max 1500 words) and its oral presentation (10 minutes)20%Exam - 3 hours 50%

VAN1011 EXPERIMENTATION AND COMPUTING

Locations: Footscray Park.

Pre-requisites: Nil

Descriptions: Experimentation and measurement: The use of instrumentation, laboratory and technical procedures, workplace safety requirements, report writing and oral presentation.Data analysis and presentation: Algorithm development, Introduction to Data types, Data file reading and writing, Graphing and analysis of experimental data, curve fitting. Statistical and error analysis of experimental data, Solutions of equations.

Credit Points: 12

Learning Outcomes: Upon successful completion of this subject students will:

• be able to demonstrate engineering project and time management skills.
• have developed independent, self reflective learning and evaluation skills;
• be able to research and analyse engineering problems and identify a range of appropriate solutions;
• be able to demonstrate an ability to work effectively as a member of a team and to manage multiple tasks.
• have acquired skills and knowledge related to small and large scale measurements with use of instrumentation and laboratory equipment.
• have become familiar with laboratory procedures and workplace safety requirements, experimental techniques and methods of presentation.
• have demonstrated appropriate professional written and oral communication skills.
• have acquired skills in the analysis, simulation and presentation of engineering data measured in the laboratory, using computing techniques.
• be able to use the knowledge gained from this subject to conduct effective project-based, laboratory and measurement activities and report presentations for subjects at higher years of the course.

Class Contact: 5 hrs equivalent per week made up of a mix of small group work, lectures, and workshops. In addition, students are expected to devote at least this much time for private and/or group study.


Assessment: An individual portfolio which provides documented evidence demonstrating that the learning outcomes for the subject have been achieved. The portfolio will include two major parts: a skills audit and an assignment set which includes structural model making, drawings and project reports.

VAN1022 SOLID MECHANICS 1

Locations: Footscray Park.

Pre-requisites: Nil

Descriptions:

• Concept of force. Equilibrium of coplanar forces. Resultant forces, components of forces.
• Levers and moments. 2D statical equilibrium. Free body force diagrams.
• Pin jointed trusses.
• Beams, loads and reactions. Internal forces in beams. Bending moment and shearing force diagrams for beams.
• 3D statical equilibrium.
• Direct stress and strain. Elastic modulus. Simple bending stress and strain. Shear stress and strain. Shear modulus,
• Poisson's ratio.

Credit Points: 12

Learning Outcomes: Upon successful completion of this subject, students will:

• have developed an understanding of forces and moments.
• be able to use Free Body Diagrams and equilibrium equations to determine forces and reactions of simple structural systems such as two-dimensional trusses and beams.
• have developed an understanding of sectional properties, of stress and strain, and of bending and shear stresses in beams.
• be able to think independently and develop and exercise imagination and insight to solve statically a given structure.
• have demonstrated an ability to work effectively as a member of a team, to write technical reports and to manage time effectively.
• be able to use the knowledge obtained from this subject to undertake later engineering subjects.

Class Contact: 5 hrs equivalent per week made up of a mix of small group work, lectures, and workshops. In addition, students are expected to devote at least this much time for private and/or group study.


Assessment: An individual portfolio which provides documented evidence demonstrating that the learning outcomes for the subject have been achieved. The portfolio will include two major parts: a skills audit and an assignment set which includes structural model making, drawings and project reports.

VAN1032 INTRODUCTION TO DESIGN

Locations: Footscray Park.

Pre-requisites: Nil.

Descriptions:

• the design process and the history of Engineering design
• creative thinking in design, generating and evaluating design alternatives
• technical, environmental, human, economic, legal criteria for evaluation of design alternatives
• making the final decision in design
• professional Engineering drawing practice, projections and views, dimensioning, layout, assembly, detailed drawings and sketching
• computer generated drawings utilizing the commercial industry standard software AutoCAD.
Credit Points: 12

Learning Outcomes: Upon successful completion of this subject, students will:

• be able to identify apparent and real design problems and identify alternatives for a given design problem
• be able to evaluate various alternatives against various design criteria, such as environmental, economical, technical, human and legal
• be able to think independently and develop and exercise imagination and insight to solve a given engineering project
• have demonstrated an ability to work effectively as a member of a team, to write technical reports and to time manage multiple tasks
• have a sound understanding of graphic procedures appropriate to Engineering design and achieved a basic level of engineering graphic skills
• have demonstrated an appropriate level of professional written and oral communication skills
• be able to prepare and use computer generated drawings as a means of communicating Engineering design to others.
• be able to use the knowledge gained from this subject to conduct effective project-based, laboratory and measurement activities and report presentations for subjects at higher years of the course.

Class Contact: 5 hrs equivalent per week of sessions made up of small group work, team meetings, workshops, seminars and site visits. In addition, students are expected to devote at least this much time for private and/or group study.


Assessment: An individual portfolio which provides documented evidence demonstrating that the learning outcomes for the subject have been achieved. The portfolio will include skills audits, design project reports, design drawings and models, reflective journals, design notebooks, self and peer assessment, oral presentations.

VAN2021 SOLID MECHANICS 2

Locations: Footscray Park,

Pre-requisites: VAN1022 - SOLID MECHANICS I

Descriptions:

• Properties of sections, including area, centroids, first and second 'moments' of area.
• Polar moment of area. Principal axes of sections. Parallel axis theorem.
• Deflection of simple determinate beams. Deflections by Macaulay’s method and superposition.
• Failure modes and loads for compression members, includes squashing / elastic buckling and combined effect of direct and bending stresses.
• Stresses and strains in two dimensions, Mohr’s circle, principal stress.
• Elastic bending stresses and Mohr’s circle, principal stress.
• Unsymmetrical bending. Shear centre. Principal axes.
• Torsion in solid and thin-wall tubes. Open and closed sections.
• Simple frames under bending.

Credit Points: 12

Learning Outcomes: On successful completion of this unit, students are expected to be able to:

• Calculate centroids, centre of gravity, moment of inertia for simple and composite elements;
• Calculate the deflection of beams;
• Calculate shear stresses in beams and sketch shear flow distribution;
• Define failure modes of compression members;
• Explain the concepts of principal stress and Mohr’s circle;
• Describe twist and torsion in structures and determine shear stress and angle of twist in simple structures.

Class Contact: Sixty (60) hours or equivalent for one semester comprising of a mix of small group work, lectures, and workshops.

Assessment: An individual portfolio which provides documented evidence demonstrating that the learning outcomes for the subject have been achieved. The portfolio will include two major parts: a skills audit and an assignment set which includes structural model making, drawings and project reports. Report Based on PBL activities 40%

**VAN2032 ENGINEERING DESIGN**

Locations: Footscray Park,

Pre-requisites: VAN 1022 Solid Mechanics 1

Descriptions: The structural design covers: Static dead and live loads, The fundamental rationale in choosing design loads and the calculation of specific loads. Design of simple structural steel beams and columns. Design of bolted and welded connections in simple shear or tension. The mechanical design covers: Design uncertainties and reliability, Theories of Static Failure, Low and High cycle fatigue failure, Linear and torsional impact failure. Many of the topics will be related to case studies such as building components and mechanical elements.

Credit Points: 12

Learning Outcomes: Upon successful completion of this subject students will be able to demonstrate:

- An understanding of the concepts for static and dynamic and structural actions.
- The ability to apply concepts in the appropriate determination of design loads to an introductory level.
- The ability to apply concepts in the design of simple structural and mechanical elements.
- The ability to critically evaluate the sensibility of design outcomes.
- The ability to present design outcomes in a professional manner.
- The ability within the context of the subject areas, to formulate and solve specific design problems.
- The ability to work both autonomously and as a member of a team, and effectively communicate design investigations by a variety of means.

Class Contact: 5 hrs equivalent per week of sessions made up of small group work, team meetings, workshops, seminars and presentations. In addition, students are expected to devote at least this much time for private and/or group study.

Required Reading: Nil.

Assessment: An individual portfolio, which provides evidence that demonstrates that the learning outcomes have been achieved. The portfolio may include skills audits, project reports including technical calculations, reflective journals, workbooks, self and peer assessment.

**VAN2041 THERMOFLUIDS**

Locations: Footscray Park,

Pre-requisites: REP1002 - ENGINEERING PHYSICS 1B


Credit Points: 12

Learning Outcomes: To be advised.

Class Contact: three hrs of lectures and two hrs of tutorial/laboratory sessions per week.

**VAN2061 ENGINEERING MATERIALS**

Locations: Footscray Park,

Pre-requisites: VAN1022 Solid Mechanics 1 and REP1001 Engineering Physics 1A.


Credit Points: 12

Learning Outcomes: Upon successful completion of this subject, students will be able to demonstrate:

- An understanding of processes and key issues related to engineering science in manufacturing and environment.
- An ability to solve a range of numerical engineering problems found in engineering practice and engineering design.
- An ability, within the context of the subject areas above, to find and use relevant information, to formulate and solve specific problems, to work both autonomously and as a member of a team, to effectively communicate ideas, issues, investigations and results by a variety of methods, and to work in culturally diverse settings.

Class Contact: 5 hrs equivalent per week of sessions made up of small group work, team meetings, workshops, seminars, laboratory sessions and site visits. In addition, students are expected to devote at least this much time for private and/or group study.


Assessment: An individual portfolio which provides evidence that demonstrates that the learning outcomes have been achieved. The portfolio may include skills audits, laboratory reports, site visit / project reports, reflective journals, workbooks, self and peer assessment.
VAN3052 ENGINEERING MANAGEMENT

Locations: Footscray Park,

Pre-requisites: Nil


Credit Points: 12

Learning Outcomes: To be advised.

Class Contact: three hrs of lectures; 1hr of tutorial and 1hr of computer laboratory session per week.


Assessment: Tutorial 1: based on weeks 1-6 (calculation, sketches max words 200), 10%; Tutorial 2: based on weeks 7-11 (calculation, sketches max words 200), 10%; Assignment 1: Use of application software Excel (computer applications, max word 300), 10%; Assignment 2: Use of application software MSProject 2000 (computer applications, max word 300), 10%; three hour examination, 60%.

VAN4011 ENGINEERING PROJECT 1

Locations: Footscray Park,

Pre-requisites: Completion of all subject prescribed in Year 3

Descriptions: This unit constitutes a major capstone task for the engineering courses listed above, and provides students with the opportunity to integrate and further develop a range of technical and generic skills acquired in earlier course years. It will typically involve: preliminary investigation and follow-up explicit formulation of an engineering related problem, review of relevant literature and/or discussion with a range of stakeholders, critical analysis of the problem, development/testing of a range of possible alternative solutions, and evaluation of these against social, environmental and economic criteria prior to selection of a ‘best’ solution. This project will normally be continued in VAN4012, semester 2. Students are also required to undertake a number of activities relating to improvement in communication skills, resume preparation, job application, and development of good interview techniques.

Credit Points: 12

Learning Outcomes: On successful completion of this unit, it is expected that students will

- be able to apply engineering knowledge and problem solving and project management skills learnt from the course.
- be able to formulate, plan, design and/or construct and test solutions for an engineering problem specific to their chosen discipline.
- have developed skills in working with technical support staff, fellow students, and (usually) industry and/or community representatives.
- have developed work related skills including job application and interview techniques.

Class Contact: This unit will effectively be delivered in PBL mode, and will comprise 48 hours (4 hours equivalent per week) of sessions made up of small group work, team meetings, lectures, workshops, seminars, practical work and site visits. In addition, students are expected to devote an average of at least 6 hours per week for private and/or group work on the project and related issues. The unit is worth 12 credit points.

Required Reading: Lecture and class notes from various prerequisite units relating specifically to the project undertaken.

Assessment: Based 100% on an individual portfolio which documents evidence that the learning outcomes have been achieved. The portfolio will typically be based on individual project participation (which may be demonstrated by a project reflective journal plus peer group / staff observations) and contribution to a comprehensive project report (around 50%), plus a project oral presentation, professional employment application and mock interview. Further details on portfolio components will be issued to students during the first week of classes.

VAN4012 ENGINEERING PROJECT 2

Locations: Footscray Park,

Pre-requisites: Satisfactory completion of VAN4011 Engineering Project 1.

Descriptions: This unit constitutes a major capstone task for the engineering courses listed above, and provides students with the opportunity to integrate and further develop a range of technical and generic skills acquired in earlier course years. It will typically involve: preliminary investigation and follow-up explicit formulation of an engineering related problem, review of relevant literature and/or discussion with a range of stakeholders, critical analysis of the problem, development/testing of a range of possible alternative solutions, and evaluation of these against social, environmental and economic criteria prior to selection of a ‘best’ solution. (The project work undertaken here will normally be a continuation of that carried out in VAN4011).

Credit Points: 12

Learning Outcomes: On successful completion of this unit, it is expected that students will be able to:

- be able to apply engineering knowledge and problem solving and project management skills learnt from the course.
- be able to formulate, plan, design and/or construct and test solutions for an engineering problem specific to their chosen discipline.
- have developed skills in working with technical support staff, fellow students, and (usually) industry and/or community representatives.

Class Contact: This unit will effectively be delivered in PBL mode, and will comprise 48 hours (4 hours equivalent per week) of sessions made up of small group work, team meetings, lectures, workshops, seminars, practical work and site visits. In addition, students are expected to devote an average of at least 6 hours per week for private and/or group work on the project and related issues. The unit is worth 12 credit points...

Required Reading: Lecture and class notes from various prerequisite units relating specifically to the project undertaken.

Assessment: Based 100% on an individual portfolio which documents evidence that the learning outcomes have been achieved. The portfolio will typically be based on individual project participation (which may be demonstrated by a project reflective journal plus peer group / staff observations) and contribution to a comprehensive project report (around 70%), plus a project oral and poster presentation (around 30%). Further details on portfolio components will be issued to students during the first week of classes.

VAN4051 ENGINEERING PROJECT MANAGEMENT

Locations: Footscray Park,

Pre-requisites: VAN3052 Engineering Management

Descriptions: The role of engineering project management in the industry. Roles of Project Manager. Tendering process, strategies and practices. Forms of construction contracts. Contract administration phases. Cost management system for the progressive cost control of a project. Plan site administration of medium sized projects. Financial feasibility for long-term development projects, break-even analysis,
engineering project evaluation, and preparation of project cash flow budgeting, current construction industry practices. Understand various forms of project delivery methods. Developing quality management system, Developing quality assurance process; measuring process performance; feedback and corrective action; responding to external changes; alternative approaches to total quality management; Identifying the required resources - in terms of human, machines and materials; understanding the need vs. wants; selecting and apportioning in a resource limited situation; managing through people; motivation; use of power; management styles; effective project communication; Non adversarial approach to people management; role of unions and employer organisations in engineering industry; legal aspects relating to contracts, responsibility and liability of a manager running a small engineering company.

Credit Points: 12

Learning Outcomes: On successful completion of this unit, it is expected that students will be able to:

• understand project cash flow and budget with respect to project control at various stages of the projects.
• undertake preliminary financial feasibility of a typical engineering facility.
• participate effectively as a member of a multi-discipline project control group.
• understand and implement quality management in an engineering industry.
• understand the role of unions and employer organisations in engineering industry.
• deal with resource conflict and be able to resolve them.
• develop an understanding of processes involved in running a successful engineering business.

Class Contact: This unit will be delivered in PBL mode, and will comprise 60 hours (5 hours equivalent per week) of sessions made up of small group work, team meetings, lectures, workshops, seminars, practical work and site visits. In addition, students are expected to devote at least the same amount of time for private and/or group study. The unit is worth 12 credit points.

Required Reading: Sarma, V. and Zhang, K., VAN4051 Lecture Notes

Assessment: Based 100% on an individual portfolio which documents evidence that the learning outcomes have been achieved. The portfolio may include skills audit results, assignment / project reports including technical calculations, site visit reports, a reflective journal, workbook(s), and self and peer assessment. Further details on portfolio components will be issued to students during the first week of classes.

VAR2001 MECHATRONICS 1

Locations: Footscray Park,
Pre-requisites: VAR1001 Robotics 1.

Descriptions: Co-ordinate and measurement systems, actuator and control systems, application of kinematics and dynamics concepts, trajectory planning and control, electronic and mechanical devices, sensors and instrumentation, application of power motors, actuators and transmission devices.

Credit Points: 12

Learning Outcomes: To be advised.

Class Contact: Three hrs of lectures and two hrs of tutorials per week.


Assessment: Laboratory report #1, 5%; Laboratory report #2, 5%; Laboratory report #3, 5%; Assignment (maximum 1500 words), 10%; Mid-semester test, 10%; Tutorial presentation , 5%; three hour examination, 60%.

VCC8001 RESEARCH THESIS FULL TIME

Locations: Footscray Park,
Pre-requisites: Nil.

Descriptions: The unit will enable students to: identify a research problem and critically review the relevant literature; determine appropriate methods to study the problem; collect, and analyse data, and generate results using suitable statistical and analytical techniques; draw conclusions, critically evaluate the process undertaken and make recommendations for future research and for practice; present the results of the research undertaken, both clearly and accurately in a written thesis. The research topic chosen will allow the candidate to develop a methodology and to apply it to an appropriate problem or situation. The thesis will normally be from 15,000 to 25,000 words. It will report an independently conducted research which demonstrates the student’s ability to clearly define a problem, to undertake a detailed literature search and review the literature on the topic area. The student shall also demonstrate both the ability to develop and/or apply models to study the problem and good data selection, collection and analysis skills. Students will normally be supervised by an academic member of the Department of Civil and Building Engineering and by a joint supervisor external to the Department. The external supervisor will be an academic from another Department of Victoria University or from another institution or an industry practitioner.

Credit Points: 48

Learning Outcomes: To be advised.

Class Contact: Twelve hours per week for one semester.

Required Reading: To be advised by lecturer.

Assessment: To be advised.

VCC8002 RESEARCH THESIS FULL TIME

Locations: To be advised,

Pre-requisites: To be advised.

Descriptions: This unit of study is part of a research degree program. Information on research topics for the Faculty of Health, Engineering and Science may be found on the faculty website at the following link: http://www.vu.edu.au/Faculties/HealthEngineeringandScience/ResearchandResearchTraining/MajorResearchAreas/ Assessment criteria and Core Research Graduate Attributes can be found on the Office for Postgraduate Research website at the following link: http://www.vu.edu.au/Research/OfficeforPostgraduateResearch/PolicyProcessesandGuidelines/

Credit Points: 48

Learning Outcomes: To be advised.

Class Contact: To be advised.

Required Reading: To be advised.

Assessment: To be advised.

VCC8011 RESEARCH THESIS (PART-TIME)

Locations: Footscray Park,

Pre-requisites: Nil.

Descriptions: The unit will enable students to: identify a research problem and critically review the relevant literature; determine appropriate methods to study the problem; collect, and analyse data, and generate results using suitable statistical and analytical techniques; draw conclusions, critically evaluate the process undertaken and make recommendations for future research and for practice; present the results of the research undertaken, both clearly and accurately in a written thesis. The research topic chosen will allow the candidate to develop a methodology and to apply it to an appropriate problem or situation. The thesis will normally be from 15,000 to 25,000 words. It will report an independently conducted research which
demonstrates the student’s ability to clearly define a problem, to undertake a detailed literature search and review the literature on the topic area. The student shall also demonstrate both the ability to develop and/or apply models to study the problem and good data selection, collection and analysis skills. Students will normally be supervised by an academic member of the School of the Built Environment and by a joint supervisor external to the Department. The external supervisor will be an academic from another Department/School at Victoria University or from another institution or an industry practitioner.

Credit Points: 24

Learning Outcomes: To be advised.

Class Contact: Six hours per week for two semesters.

Required Reading: To be advised by lecturer.

Assessment: To be advised.

VCC8012 RESEARCH THESIS (PART TIME)

Locations: To be advised.

Pre-requisites: To be advised.

Descriptions: This unit of study is part of a research degree program. Information on research topics for the Faculty of Health, Engineering and Science may be found on the faculty website at the following link: http://www.vu.edu.au/Faculties/HealthEngineeringandScience/ResearchandResearchTraining/MajorResearchAreas/Assessment criteria and Core Research Graduate Attributes can be found on the Office for Postgraduate Research website at the following link: http://www.vu.edu.au/Research/OfficeforPostgraduateResearch/PolicyProcessesandGuidelines/

Credit Points: 24

Learning Outcomes: To be advised.

Class Contact: To be advised.

Required Reading: To be advised.

Assessment: To be advised.

VCP5705 PROJECT MANAGEMENT AND INFORMATION TECHNOLOGY

Locations: Footscray Park,

Pre-requisites: Nil.

Descriptions: This unit will develop students’ skills in the use of a number of software packages in the areas of General Project Management Information Systems and Specialised Project Management Information Systems. Students will gain appreciation of where computer packages can aid the project management process for feasibility and sensitivity analysis, planning and monitoring and information processing and decision support functions. The subject content includes the decision to computerise, hardware and software procurement considerations, current computer usage in this industry; overview of computer hardware and software, current computer trends; overview of Project Management Information Systems (spreadsheet/financial modelling, planning and resource control, Data Base Management Systems (DBMS), and 4th Generation Languages (4GLs)); detailed investigation of at least two software packages from item above; managing change and introduction of computers, the machine/human interface, training and installation problems and opportunities simulation modelling as an alternative to traditional, activity based management systems; trends in CAD and its impact on Project Management; quality control and Project Management Information Systems.

Credit Points: 12

Learning Outcomes: To be advised.

Class Contact: Three hours per week for one semester.

Required Reading: To be advised by lecturer.

Assessment: Individual assignment, 15%; group assignment presentation, 5%; report, 40%; examination, 40%. Students must attain a mark of 50% in each assessable component to pass this subject. Supplementary assessment will not be available.

VCP5716 PROJECT DEVELOPMENT

Locations: Footscray Park,

Pre-requisites: Nil.


Credit Points: 12

Learning Outcomes: To be advised.

Class Contact: Three hours per week for one semester.

Required Reading: To be advised by lecturer.

Assessment: Assignments, 15%; group project, 45%; examination, 40%. Students must attain a mark of 50% in each assessable component to pass this subject. Supplementary assessment will not be available.

VCP5726 PROJECT PROCUREMENT MANAGEMENT

Locations: Footscray Park,

Pre-requisites: Nil.

Descriptions: The unit will develop an understanding of procurement systems and modern building technology with respect to procurement options available to project sponsors including build-ability and use-ability issues. The subject content provides an overview of procurement systems and modern technology and the problems that have arisen from it; the lessons to be learned from them and how to try and avoid similar pitfalls in the future. Forms of traditional and non-traditional procurement options such as D&B, GMP, BOD/BOT. Modern building materials and the problems that are being encountered in their use, including concrete, cement sheet, brickwork, etc. Building materials and their modern usage, including aluminium, steel and plastics; looking at usage and cost considerations. Modern formwork systems. Fire protection approach to building. On-site considerations. Materials handling - cranes, hoists, concrete control, concrete pumping and mix design criteria, safety factors and cost implications. Modern construction techniques.

Credit Points: 12

Learning Outcomes: To be advised.

Class Contact: Three hours per week for one semester.
VCP5736 FACILITY LIFE CYCLE COSTING

Locations: Footscray Park,

Pre-requisites: Nil.

Description: A description of and the need for consideration of lifecycle costing; maintainability and efficiency. Terotechnology: why we need to use terotechnology in building industry; economic and technical factors - measures of performance; present state of knowledge. An integrated treatment of design, specification, construction use, maintenance and re-use phases for building and the effect on the life-cycle costs of the building. Discounting theory. Time value of money; discounting formulae; inflation; depreciation, taxation; before and after-tax project return; evaluation methods for economy studies. Theory of life-cycle cost optimisation. Basis of theoretical analysis of costs; total life-cost concepts; maintenance costs and capital costs; energy costs and capital costs; taxation and other factors; constraints; technical and others. Practice of life-cycle cost optimisation. Case study: practical issues; introduction; outline of factors to be considered in building obsolescence and refurbishment; market aspects; physical aspects and limitations; authorities and regulatory constraints; economic constraints. Measurement and the assessment of utilisation of resources during each phase of the building process. Design phase (including brief documentation); construction phase; functional (occupational) life; re-evaluation as to refurbish or demolish phase. Asset management using an integrated planning and budgeting approach. Need for an integrated system; provision of funds at regular intervals and/or in emergency situations; fabric of building and other services; total assets management; case-studies - Latrobe system, others. Operational control. Control systems; identification of effective, preventive and remedial measures. Establishment of a maintenance policy. Preventive maintenance; corrective maintenance; records and register for maintenance as a control tool; accounting and cost records and audits. Degradation of buildings. Identification of maintenance approaches for building structure, fabric, equipment and plant; nature and causes of degradation. Information and management systems. Building services supervisory system; description Local Monitoring and Control Systems (LMCS); Central Supervisory Systems (CSS). Building engineering services information and management systems; functions; commercially available packages; selection, evaluation of benefits. Case study presentation and review.

Credit Points: 12

Learning Outcomes: To be advised.

Class Contact: Three hours per week for one semester.

Required Reading: To be advised by lecturer.

Assessment: Assignment, 20%; group project, 40%; examination, 40%. Students must attain a mark of 50% in each assessable component to pass this subject. Supplementary assessment will not be available.

VCP5745 BUILDING REGULATORY MANAGEMENT

Locations: Footscray Park,

Pre-requisites: Nil.

Description: The unit will develop a suitable background and understanding of by-laws and regulations that apply to building activities in Victoria. Subject content includes authorities controlling building activities; role and function of the building surveyors; contents and interpretation of various by-laws and regulations governing building activities such as: Local Government Acts, Building Code of Australia, Water and Sawyerage Acts, Health Act, Labour and Industry Act, Lifts and Crane Act, Scaffolding Act, Environmental Protection Act, By-laws governing fire protection, Strata and Cluster Titles Act, Housebuilder’s liability, Land use and development strategy, Guide to administrative procedures, Planning guidelines, Townscape and heritage considerations, Checklist of requirements in a major development, The role of various professional disciplines. General introduction to BC Act. Definitions. Relationship to other Acts, new Acts. Building Approvals process. Introduction to BCA, Part A. Classes of buildings Parts C, D, F and G. Accreditation: Protection of adjoining property. Enforcement. BCA and plan check. Fire as hazard to life and property. Overview of current knowledge in fire start and spread in buildings. Overview of fire safety and regulations in Australia; current practices in regulation and building control; fire safety in new proposed Code. Overview of planning schemes in Victoria. Need for a Uniform Planning Scheme; need for optimisation of planning process. Local Government planning officials’ views on a rational new system; industry perception of the planning system’s current operation; possibility of planning being accomplished by certification. International - scene and practice - what can we learn from it.

Credit Points: 12

Learning Outcomes: To be advised.

Class Contact: Three hours per week for one semester.

Required Reading: To be advised by lecturer.

Assessment: Assignments, 20%; examination, 70%; class participation, 10%. Students must attain a mark of 50% in each assessable component to pass this subject. Supplementary assessment will not be available.

VEA2101 INTRODUCTION TO COMPUTER CONTROL AND AUTOMATION

Locations: Footscray Park,

Pre-requisites: VEF1002 - ENABLING SCIENCES 1B


Credit Points: 6

Learning Outcomes: On successful completion of this unit, students are expected to be able to:

- program PLC;
- apply PID algorithm to effectively control a system;
- use appropriate sensors and actuators in an engineering setting;
- use Ato-D and D-to-A for interfacing.

Class Contact: Three hours per week for one semester comprising 30 hours of lectures/tutorials and 10 hours of laboratory sessions.


Assessment: Laboratory Assignments (30%); Tests (10%); Examination (60%).

VEA2102 INDUSTRIAL CONTROL SYSTEMS AND ELECTRONICS MANUFACTURING AUTOMATION

Locations: Footscray Park, Pre-requisite(s) VEA2101 Introduction to Computer Control and Automation

Pre-requisites: To be advised.


Credit Points: 6
Learning Outcomes: On successful completion of this unit, students are expected to be able to:

- explain SCADA systems and its components as well as being able to design a SCADA system for a simple manufacturing plant;
- explain the whole electronics manufacturing process in general and PCB design and production in particular;
- design a PCB for a given electronic circuit that could be produced in volume by outsourcing to other companies.

Class Contact: 30 hours of contact comprising 18 hrs of lectures/tutorials and 12 hours of laboratory sessions.


Assessment: Laboratory Assignments (50%); Tests (10%); Examination (40%).

VEA3001 INTRODUCTION TO CONTROL SYSTEMS A

Locations: To be advised., Footscray

Pre-requisites: VEF2002 Systems and Mathematics 2B

Descriptions: The unit is designed to enable it to both ensure that students develop an understanding of Control Engineering, and to provide support for students requiring knowledge of Control Engineering in a concurrently studied PBL unit. This has required the syllabus to be presented as a collection of lectures, the emphasis and sequence of which may be varied to accommodate the demands of any concurrent Engineering Design exercises. In addition to delivery by lecture and tutorial the subject will incorporate laboratory exercises and demonstrations of the concepts and techniques presented. Although primarily concerned with continuous time systems, lectures on discrete time systems may be delivered should these be required for the concurrent Engineering Design exercises.

Credit Points: 6

Learning Outcomes: The Learning outcomes of this unit of study will depend upon the lectures presented, as required to support concurrent Engineering Design exercises.

On successful completion of this unit, students are expected to be able to:

- To have a basic understanding of the use of transfer functions, signal flow graphs and block diagrams in the description and analysis of control systems
- To appreciate the difference between real systems and the models of these systems.
- To be aware of the limitations of simulation software. To be able to write a quantitative specification of system performance.
- To be able to use Root Locus Techniques and Matlab to analyse the performance of LTI SISO system models.
- To be able to design P, PI, PID, lead, lag and lead-lag controllers to modify the behaviour of a LTI SISO model.
- To have an introductory knowledge of state-space models.
- To be able to calculate an overall transfer function by use of both Mason s Gain Formula and Block Diagram Reduction
- To be able to use Matlab/Simulink to analyse the behaviour of LTI SISO systems (including use of LTI viewer and rftool).

Class Contact: 30 hours of class contact per semester. 2 hours lecture/tutorial and 0.5 hours of laboratory exercises per week.

Required Reading: Ives, R., Introduction to Control Systems 3B Lecture Notes, Victoria University, 2008.

Assessment: End of semester examination 65%, mid-semester test 15% and laboratory 20%.

VEA3002 INTRODUCTION TO CONTROL SYSTEMS B

Locations: To be advised., Footscray

Pre-requisites: VEA3001 Introduction to Control Systems A

Descriptions: This unit of study further develops the student’s knowledge of Control Systems and Control Engineering. The unit is designed to enable it to both ensure that students develop an understanding of Control Engineering and to provide support for students requiring knowledge of Control Engineering in a concurrently studied Engineering Design unit. This has required the syllabus to be presented as a collection of lectures, the emphasis and sequence of which may be varied to accommodate the demands of any concurrent Engineering Design exercises. In addition to delivery by lecture and tutorial the unit will incorporate laboratory exercises and demonstrations of the concepts and techniques presented.

Credit Points: 6

Learning Outcomes: The Learning outcomes of this unit of study will depend upon the lectures presented, as required to support concurrent Engineering Design exercises.

On successful completion of this unit, students are expected to be able to:

- To be able to write and execute C programs on the DS1102 card to both control and monitor a DC motor servomechanism.
- To be able to operate the DS1102 system using both the Control Desk GUI and through Matlab/Simulink.
- To understand how execution time impacts upon and limits the ability to achieve real time control.
- To be able to convert between State-Space and transfer function models of a LTI SISO system.
- To understand that State-Space models enable the representation of internal signals, and may be used to model MIMO systems.

Class Contact: To be advised.

Required Reading: Ives, R., Introduction to Control Systems 3B (Real Time Control) Lecture Notes, Victoria University, 2009.

Assessment: End of semester examination 65%, a mid-semester test 15% and laboratory 20%.

VEA4001 DISCRETE TIME CONTROL SYSTEMS A

Locations: To be advised., Footscray

Pre-requisites: VEA3001 Introduction to Control Systems A

Descriptions: This unit of study further develops the student’s knowledge of Control Systems and Control Engineering and to provide support for students requiring knowledge of Control Engineering in a concurrently studied Engineering Design unit. This has required the syllabus to be presented as a collection of lectures, the emphasis and sequence of which may be varied to accommodate the demands of any concurrent PBL exercises. In addition to delivery by lecture and tutorial the subject will incorporate laboratory exercises and demonstrations of the concepts and techniques presented.

Credit Points: 6

Learning Outcomes: The Learning outcomes of this unit of study will depend upon the lectures presented, as required to support concurrent Engineering Design exercises.

On successful completion of this unit, students are expected to be able to:

- To have a basic understand of the use of pulse transfer functions in the description and analysis of computer controller systems.
- To be able to convert a continuous-time transfer function model into a zero-order hold equivalent pulse transfer function model.
On successful completion of this unit, it is expected that students will be able:

- To be able to convert between pulse transfer function models and difference equation models.
- To be able to perform analysis and design of discrete-time control systems with the Root Locus method.
- To be able to perform analysis and design of discrete-time control systems with the use of Bode diagrams in conjunction with the Bilinear transformation.
- To understand the need of performance trade-off in control design problems.
- To be able to use MathLab/Simulink to analyse and design discrete-time control systems.
- To be able to use the DSpace DS1102 DSP card and Real-Time Workshop for rapid prototyping.

Class Contact: 30 hours of class contact. 2 hours lecture/tutorial and 0.5 hours of laboratory exercises per week


Assessment: End of semester examination 65%, a mid-semester test 15% and laboratory 20%.

VEA4200 FUZZY CONTROL AND APPLICATIONS

Locations: Footscray Park,

Pre-requisites: VEA3001 Introduction to Control Systems A.

Descriptions: Introduction to fuzzy sets theory: vagueness and uncertainty formalisation problem, fuzzy sets theory and probability theory comparison and discussion, fuzzy set definitions, properties of fuzzy sets, operations on fuzzy sets. Fuzzy relations: classical relations, fuzzy relations, operation on fuzzy relations, the extension principal. Natural language formalisation and approximate reasoning: linguistic variables, fuzzy propositions, fuzzy if - then statements, inference rules. Theoretical fundamentals of fuzzy control: the structure of a fuzzy controller, the rule base, the data base, the inference engine, choice of fuzzification and defuzzification procedures. Software and hardware tools for fuzzy control. Fuzzy controller design using software packages. Fuzzy controller implementation. Applications of fuzzy control.

Credit Points: 6

Learning Outcomes: The Learning outcomes of this unit of study will depend upon the lectures presented, as required to support concurrent PBL exercises.

On successful completion of this unit, it is expected that students will be able:

- To be able to understand the basic mathematical concepts of fuzzy sets.
- To be able to understand the structure of fuzzy logic controller.
- To be able to design and implement fuzzy logic controller.
- To be able to use MathLab/Simulink to analyse and design fuzzy control systems.
- To be able to use the DSpace DS1102 DSP card and Real-Time Workshop for rapid prototyping of the fuzzy control systems.

Class Contact: 30 hours comprising 15 hours of lectures/tutorial and 15 hours of laboratory and project work.


Assessment: Class tests/assignments throughout the semester 20%; Laboratory work 40%; Project work 40%.

VEA4400 ROBOTICS AND AUTOMATION

Locations: Footscray Park,

Pre-requisites: VEF1002 Enabling Sciences 1B and VEF1004 Electrical Fundamentals 1B.


Credit Points: 6

Learning Outcomes: On successful completion of this unit, students are expected to be able to:

- apply programmable logic controllers and manipulators in factory automation,
- program robots for manufacturing tasks,
- analyse and design vision systems for automatic inspection and guidance.

Class Contact: 30 hrs of contact comprising 15 hrs of lectures/tutorials and 15hrs of Laboratory.

Required Reading: Handout Notes.

Assessment: Examination 40%, Tests 10%, Laboratory Assignments 50%.

VEA6300 RESEARCH PROJECT

Locations: Footscray Park,

Pre-requisites: VEA6310 - LINEAR SYSTEMS AND CONTROL

Descriptions: Each student will undertake an individual research under the guidance of an academic staff on a suitable topic, over the duration of a semester. Lectures, seminars, and regular meetings will be held collectively to expose students to research related matters such as Research Methodology, Literature Reviews, Feasibility Studies, Experiment Design, Modelling and Simulation Techniques and Tools, Results Validation and Decision Making, Report Writing, Structured Documentation, and Scientific Presentation.

Credit Points: 48

Learning Outcomes: To be advised.

Class Contact: Twelve hours per week for one semester, comprising three hours per week group seminar, three hours per week (on average) individual meetings, discussions, etc.. with the respective supervisors, and six hours per week independent study.

Required Reading: To be advised by the supervisor of the project.

Assessment: Regular seminar presentations (3 seminars, each of 20 min. duration) 30%; Final report (Approximately 25,000 words) 50%; Final presentation of 40 min. duration) 20%. Final report is to be examined by an external examiner who could also be present at the final presentation.

VEA6310 LINEAR SYSTEMS AND CONTROL

Locations: Footscray Park,

Pre-requisites: A knowledge of linear control systems covered in a standard B.Eng. course.

transfer function matrices. Youla-Kucera parametrization of all stabilizing controllers. Analytical design of controllers. Formulation of modern optimal control problems.

Credit Points: 12

Learning Outcomes: To be advised.

Class Contact: Three hours per week for one semester. This includes two hours of lecture per week, one hour of tutorial and one hour of laboratory for every two weeks.


Assessment: Two Class Tests (1 hr each) 20%; Final Examination (3 hrs) 80%. A pass in each component is necessary for a subject pass.

VEA6311 MODELLING AND COMPUTER CONTROL

Locations: Footscray Park,

Pre-requisites: VEA6310 - LINEAR SYSTEMS AND CONTROL OR equivalent.


Credit Points: 12

Learning Outcomes: To be advised.

Class Contact: Three hours per week for one semester. This includes two hours of lecture per week, one hour of tutorial and one hour of laboratory for every two weeks.


Assessment: Tests, 20%; Examination, 80%. A pass in each component of assessment is required for a subject pass.

VEA6312 MODEL BASED PROCESS CONTROL

Locations: Footscray Park,

Pre-requisites: VEA6310 or equivalent subjects.

Descriptions: Overview of model based control design. Model complexity and the model building process. Design of robust control systems by the internal model control method; performance and robustness trade-off. Difficulty in the realisation of continuous-time Smith Predictors; design of the unified predictive controller (UPC). Analysis of design parameters and tuning of the UPC.

Credit Points: 12

Learning Outcomes: To be advised.

Class Contact: Three hours per week for one semester. This includes two hours of lecture per week, one hour of tutorial and one hour of laboratory for every two weeks.

Required Reading: To be advised by the lecturer.

Assessment: Tests, 20%; Examination, 80%. A pass in each component of assessment is required for a subject pass.

VEA6320 OPTIMAL FILTERING AND PARAMETER ESTIMATION

Locations: Footscray Park,

Pre-requisites: A knowledge of linear control systems covered in a standard B.Eng. course.


Credit Points: 12

Learning Outcomes: To be advised.

Class Contact: Three hours per week for one semester. This includes two hours of lecture per week, one hour of tutorial and one hour of laboratory for every two weeks.


Assessment: Two Class Tests (1 hr each) 20%; Final Examination (3 hrs) 80%. A pass in each component is necessary for a subject pass.

VEA6321 FUZZY AND NEURAL CONTROL

Locations: Footscray Park,

Pre-requisites: Nil


Credit Points: 12

Learning Outcomes: To be advised.

Class Contact: Three hours per week for one semester. This includes two hours of lecture per week, one hour of tutorial and one hour of laboratory for every two weeks.


Assessment: To be advised by lecturer.

VEA6322 PROCESS INSTRUMENTATION AND CONTROL

Locations: Footscray Park,

Pre-requisites: Nil


Credit Points: 12

Learning Outcomes: To be advised.

Class Contact: Three hours per week for one semester. This includes two hours of lecture per week, one hour of tutorial and one hour of laboratory for every two weeks.

Required Reading: To be advised by the lecturer.

Assessment: Laboratory exercises, 20%; Examination, 80%. A pass in each component of assessment is required for a subject pass.
VEA6331 ROBOTICS AND PROGRAMMED CONTROL

Locations: Footscray Park,
Pre-requisites: Completed an undergraduate degree in Engineering or Science
Credit Points: 12
Learning Outcomes: To be advised.
Class Contact: Three hours per week for one semester. This includes two hours of lecture per week, one hour of tutorial and one hour of laboratory for every two weeks.
Assessment: Assignments and laboratory exercises: 60%; Examination: 40%. A pass in each component of assessment is required for a subject pass.

VEA6332 ELECTRONIC CONTROL OF MOTORS

Locations: Footscray Park,
Pre-requisites: Nil
Credit Points: 12
Learning Outcomes: To be advised.
Class Contact: Three hours per week for one semester. This includes two hours of lecture per week, one hour of tutorial and one hour of laboratory for every two weeks.
Required Reading: To be advised by the lecturer.
Assessment: Tests/Assignments, 20%; Examination, 80%. A pass in each component of assessment is required for a subject pass.

VEA6341 MEASUREMENT TECHNOLOGY

Locations: Footscray Park,
Pre-requisites: Nil
Credit Points: 12
Learning Outcomes: To be advised.
Class Contact: Three hours per week for one semester. This includes two hours of lecture per week, one hour of tutorial and one hour of laboratory for every two weeks.
Required Reading: To be advised by the lecturer.
Assessment: Tests/Assignments: 40%; Examination: 60%. A pass in each component of assessment is required for a subject pass.

VEA6342 POWER DISTRIBUTION SYSTEMS

Locations: To be advised.
Pre-requisites: To be advised.
Descriptions: To be advised.
Credit Points: 12
Learning Outcomes: To be advised.
Class Contact: To be advised.
Required Reading: To be advised.
Assessment: To be advised.

VEA6350 MINOR PROJECT

Locations: Footscray Park,
Pre-requisites: VEA6310 - LINEAR SYSTEMS AND CONTROL
Descriptions: Each student will undertake an individual research on a topic allocated to him or her under the supervision of an academic staff over the duration of a semester. Regular meetings will be held between the students and their supervisors in the form of seminars where students will report their progress in the form of formal presentations. In addition, informal meetings between students and their supervisors will take place as and when required. In the process, the student will be exposed to research related matters such as Research Methodology, Literature Reviews, Feasibility Studies, Experiment Design, Modelling and Simulation Techniques and Tools, Results Analysis and Validation, Report Documentation and Presentation.
Credit Points: 24
Learning Outcomes: To be advised.
Class Contact: Six hours per week for one semester, comprising three hours per week group seminar, and three hours per week (on average) individual meetings, discussions, etc. with respective supervisors.
Required Reading: To be advised by the supervisor of the project.
Assessment: Regular seminar presentations (3 seminars, each of 20 min. duration) 30%; Final report (Approximately 12,000 words) 50%; Final presentation (of 30 min. duration) 20%.

VEA6351 POWER SYSTEMS OPERATION AND CONTROL

Locations: To be advised.
Pre-requisites: To be advised.
Descriptions: To be advised.
Credit Points: 12
Learning Outcomes: To be advised.
Class Contact: To be advised.
Required Reading: To be advised.
Assessment: To be advised.

VEA6352 DIGITAL SIMULATION OF PROTECTION SYSTEMS

Locations: To be advised.
Pre-requisites: To be advised.
Descriptions: To be advised.
Credit Points: 12
Learning Outcomes: To be advised.

Class Contact: To be advised.

Required Reading: To be advised.

Assessment: To be advised.

VEB1100 ENGINEERING DESIGN AND PRACTICE 1A

Locations: Footscray Park,

Pre-requisites: Year 12 mathematics or equivalent.

Descriptions: This is a practical, PBL mode, unit in which students work in teams to solve a number of problems specifically designed to integrate with the learning and content from VEF1001 and VEF1003. Teams of students will have an Electrical Engineering staff member as a ‘coach or mentor’ whilst working on these problems. ‘Specialist’ staff from the VEF1001 and VEF1003 units will be available to assist students with technical aspects of the problems. Staff members from the School of Communication, Culture and Languages will be available on a weekly basis to assist with the development of communications skills. Staff members from other Faculties will be available to provide workshops to assist students with the development of generic skills.

Credit Points: 24

Learning Outcomes: On successful completion of this unit, students are expected to be able to:

- Apply knowledge of basic science and engineering fundamentals;
- Communicate effectively, not only with engineers but also with the community at large;
- Display in-depth technical competence in at least one engineering discipline;
- Work on problem identification, formulation and solution;
- Utilise a systems approach to design and operational performance;
- Function effectively as an individual and in multi-disciplinary and multi-cultural teams, with the capacity to be a leader or manager as well as an effective team member;
- Discuss the social, cultural, global and environmental responsibilities of the professional engineer, and the need for sustainable development;
- Describe the principles of sustainable design and development;
- Discuss professional and ethical responsibilities and display a commitment to them;
- Recognise the need for undertaking lifelong learning;
- Locate, evaluate, manage and use information effectively.

Class Contact: 10 hours per week or equivalent for one semester.


Assessment: Students will be assessed in this unit on the basis of a portfolio, in which they are required to demonstrate the attainment of learning outcomes using self and peer evaluation and assessment, weekly team/client meetings, a reflective journal, reflective essays, expositions, audio/visual project presentations and written project reports.

VEB2100 ENGINEERING DESIGN AND PRACTICE 2A

Locations: Footscray Park,

Pre-requisites: Normally successful completion of first year EBEE or equivalent.

Descriptions: This is a practical, PBL mode, unit in which students work in teams to solve a number of problems specifically designed to integrate with the learning and content from VEF1002 and VEF1004. Teams of students will have an Electrical Engineering staff member as a ‘coach or mentor’ whilst working on these problems. ‘Specialist’ staff from the VEF1002 and VEF1004 units will be available to assist students with technical aspects of the problems. Staff members from the School of Communication, Culture and Languages will be available on a weekly basis to assist with the development of communications skills. Staff members from other Faculties will be available to provide workshops to assist students with the development of generic skills.

Credit Points: 24

Learning Outcomes: On successful completion of this unit, students are expected to be able to:

- Apply knowledge of basic science and engineering fundamentals;
- Communicate effectively, not only with engineers but also with the community at large;
- Display in-depth technical competence in at least one engineering discipline;
- Work on problem identification, formulation and solution;
- Utilise a systems approach to design and operational performance;
- Function effectively as an individual and in multi-disciplinary and multi-cultural teams, with the capacity to be a leader or manager as well as an effective team member;
- Discuss the social, cultural, global and environmental responsibilities of the professional engineer, and the need for sustainable development;
- Describe the principles of sustainable design and development;
- Discuss professional and ethical responsibilities and display a commitment to them;
- Recognise the need for undertaking lifelong learning.

Class Contact: 10 hours per week or equivalent for one semester.


Assessment: Students will be assessed in this unit on the basis of a portfolio, in which they are required to demonstrate the attainment of learning outcomes using self and peer evaluation and assessment, weekly team/client meetings, a reflective journal, reflective essays, expositions, audio/visual project presentations and written project reports.

VEB1200 ENGINEERING DESIGN AND PRACTICE 1B

Locations: Footscray Park,

Pre-requisites: VEB1100 - ENGINEERING DESIGN AND PRACTICE 1A OR equivalent.
On successful completion of this unit, students are expected to be able to:

- Apply knowledge of basic science and engineering fundamentals;
- Communicate effectively, not only with engineers but also with the community at large;
- Display in-depth technical competence in at least one engineering discipline;
- Work on problem identification, formulation and solution;
- Utilise a systems approach to design and operational performance;
- Function effectively as an individual and in multi-disciplinary and multi-cultural teams, with the capacity to be a leader or manager as well as an effective team member;
- Discuss the social, cultural, global and environmental responsibilities of the professional engineer, and the need for sustainable development;
- Describe the principles of sustainable design and development;
- Discuss professional and ethical responsibilities and display a commitment to them;
- Recognise the need for undertaking lifelong learning;
- Locate, evaluate, manage and use information effectively.

Class Contact: 10 hours per week or equivalent for one semester.

Required Reading: To be provided upon commencement of the unit to suit the student’s design project(s).

Assessment: Students will be assessed in this unit on the basis of a portfolio, in which they are required to demonstrate the attainment of learning outcomes using: self and peer evaluation and assessment, weekly team/client meetings, a reflective journal, reflective essays, expositions, audio/visual project presentations and written project reports.

VEB3100 ENGINEERING DESIGN AND PRACTICE 3A

Locations: Footscray Park,
Pre-requisites: VEB2200 - ENGINEERING DESIGN AND PRACTICE 2BOR

Descriptions: This unit is designed to create the opportunity for students to integrate generic skills with the learning and content from VEF2002 and VEF2004. Teams of students will have an Electrical Engineering staff member as a coach or mentor whilst working on these problems. Specialist staff from the VEF2002 and VEF2004 units will be available to assist students with technical aspects of the problems. Staff members from the School of Communication, Culture and Languages will be available on a weekly basis to assist with the development of communications skills. Staff members from the other schools will be available to provide workshops to assist students with the development of generic skills.

Credit Points: 24

Learning Outcomes: On successful completion of this unit, students are expected to be able to:

- Apply knowledge of basic science and engineering fundamentals;
- Communicate effectively, not only with engineers but also with the community at large;
- Display in-depth technical competence in at least one engineering discipline;
- Work on problem identification, formulation and solution;
- Utilise a systems approach to design and operational performance;
- Function effectively as an individual and in multi-disciplinary and multi-cultural teams, with the capacity to be a leader or manager as well as an effective team member;
- Discuss the social, cultural, global and environmental responsibilities of the professional engineer, and the need for sustainable development;
- Describe the principles of sustainable design and development;
- Discuss professional and ethical responsibilities and display a commitment to them;
- Recognise the need for undertaking lifelong learning;
- Locate, evaluate, manage and use information effectively.

Class Contact: 10 hours per week for one semester.

Required Reading: There are no prescribed readings for this unit. Students will be guided by the unit co-ordinator to material relevant to the student’s design project.
students are required to demonstrate the attainment of learning outcomes using: peer evaluation and assessment, weekly team/client meetings, a reflective journal, reflective essays, expositions, audio/visual project presentations and written project reports. The weightings of the components mentioned above are: Workshop attendance and participation: 10%; Workshop team project demonstration: 30%; Written technical report: 30%; Reflective Journal Portfolio: 20%

VEB3101 ENGINEERING PROJECT 3A

Locations: Footscray Park,
Pre-requisites: Successful completion of EBES Year 2.
Descriptions: Application of system analysis and design principles to develop a detailed specification, detailed design and test plan for a project with substantial software and/or hardware components. Development of the system is undertaken in a staged process, with deliverables and presentation at the end of each stage.
Credit Points: 12
Learning Outcomes: On successful completion of this unit, students are expected to be able to:
- explain the principle of system analysis and design and be able to apply this methodology to project work;
- produce necessary project documentation that could be used for implementation and testing of the hardware and/or software by a suitably qualified engineering technologists or engineers.
Class Contact: 30 hours of contact comprising 12 hrs of lectures/tutorials and 24 hours of laboratory and project work.
Assessment: Project work (60%); Examination (40%).

VEB3102 ENGINEERING PROJECT 3B

Locations: Footscray Park,
Pre-requisites: VEB3101 - ENGINEERING PROJECT 3A
Descriptions: Application of software, hardware techniques and research skills acquired in the course to implement and test an individual project according to a detailed specification and test plan.
Credit Points: 12
Learning Outcomes: On successful completion of this unit, students are expected to be able to:
- apply theories and techniques from various specialisations to solve complex engineering problem;
- implement and test a project according to a detailed specification and test plan.
Class Contact: 30 hours of Project work.
Required Reading: There is no prescribed reading for this unit. Students will be guided by the unit co-ordinator to material relevant to the project.
Assessment: Project work (100%).

VEB3200 ENGINEERING DESIGN AND PRACTICE 3B

Locations: Footscray Park,
Pre-requisites: VEB3100 - ENGINEERING DESIGN AND PRACTICE 3A plus Year 3 semester 1 Stream Core Unit.
Descriptions: This unit is designed to create the opportunity for students to integrate generic skills with the learning and content from their chosen specialisation unit. The PBL approach to this unit of study requires students to form a holistic consideration of problems which are not only technical in nature but also exercise the students generic skills. Students are required to demonstrate critical thinking, problem solving skills, systems thinking and professional engineering practice. The unit is delivered in PBL mode and will encourage students to become independent learners and self reflective about professional communication processes and practices.
Credit Points: 24
Learning Outcomes: On successful completion of this unit, students are expected to be able to:
- Apply knowledge of basic science and engineering fundamentals;
- Communicate effectively, not only with engineers but also with the community at large;
- Display in-depth technical competence in at least one engineering discipline;
- Work on problem identification, formulation and solution;
- Utilise a systems approach to design and operational performance;
- Function effectively as an individual and in multi-disciplinary and multi-cultural teams, with the capacity to be a leader or manager as well as an effective team member;
- Discuss the social, cultural, global and environmental responsibilities of the professional engineer, and the need for sustainable development;
- Describe the principles of sustainable design and development;
- Discuss professional and ethical responsibilities and display a commitment to them;
- Recognise the need for undertaking lifelong learning;
- Locate, evaluate, manage and use information effectively.
Class Contact: 10 hours per week for one semester.
Required Reading: There are no prescribed readings for this unit. Students will be guided by the unit co-ordinator to material relevant to the unit.
Assessment: Students will be assessed in this unit on the basis of a portfolio, oral presentations, project demonstration, and written technical report. In the portfolio students are required to demonstrate the attainment of learning outcomes using: peer evaluation and assessment, weekly team/client meetings, a reflective journal, reflective essays, expositions, audio/visual project presentations and written project reports. The weightings of the components mentioned above are: Workshop attendance and participation: 10%; Oral presentation: 10%; Semester and final team product demonstration: 30%; Written technical report: 30%; Reflective Journal Portfolio: 20%

VEB4006 DIRECTED STUDIES IN ELECTRICAL ENGINEERING 1

Locations: Footscray Park,
Pre-requisites: To be advised.
Descriptions: This unit is to provide prescribed learning outcomes tailored to the requirements of students transferring into undergraduate programs offered by the School of Electrical Engineering. The outcomes will be defined by the School on an individual, as-required, basis. The unit is intended to facilitate both articulation students and students with recognised prior learning that does not lend itself to simple mapping into the units offered in their selected program. The content will
be a subset of the content of a core program unit of study, which matches both the required learning outcomes and is defined by the School to satisfy the 6 credit point weighting of this unit.

Credit Points: 6

Learning Outcomes: On successful completion of this unit, students are expected to be able to:

- Identify the key elements in a previously unseen problem associated with the negotiated content area of this unit of study;
- Locate the relevant underpinning theory in references available to them;
- Use that support and appropriate mathematical and laboratory techniques, where necessary, to apply that information to the novel situation to reach a solution to the problem posed.

Class Contact: 5 hours per week or equivalent for one semester.

Required Reading: To be prescribed by the School.

Assessment: A series of assignments, tests and reports as negotiated for each individual or group of students with a similar background.

VEB4012 DIRECTED STUDIES IN ELECTRICAL ENGINEERING 2

Locations: Footscray Park,

Pre-requisites: To be advised.

Descriptions: This unit is to provide prescribed learning outcomes tailored to the requirements of students transferring into undergraduate programs offered by the School of Electrical Engineering. The outcomes will be defined by the School on an individual, as-required, basis. The unit is intended to facilitate both articulation students and students with recognised prior learning that does not lend itself to simple mapping into the units offered in their selected program. The content will be a subset of the content of a core program unit of study, which matches both the required learning outcomes and is defined by the School to satisfy the 12 credit point weighting of this unit.

Credit Points: 12

Learning Outcomes: On successful completion of this unit, students are expected to be able to:

- Identify the key elements in a previously unseen problem associated with the negotiated content area of this unit of study;
- Locate the relevant underpinning theory in references available to them;
- Use that support and appropriate mathematical and laboratory techniques, where necessary, to apply that information to the novel situation to reach a solution to the problem posed.

Class Contact: 10 hours per week or equivalent for one semester.

Required Reading: To be prescribed by the School.

Assessment: A series of assignments, tests and reports as negotiated for each individual or group of students with a similar background.

VEB4100 ENGINEERING DESIGN 4A

Locations: Footscray Park,

Pre-requisites: Successful completion of year 3 EBEE or equivalent.

Descriptions: In this unit, students will commence a major design problem resulting in a complete and working outcome which meets the agreed specifications and demonstrates an understanding of professional engineering standards. The project will continue in the follow-on second semester unit VEB4200. The student will define the problem, develop functional specifications (in collaboration with the project supervisors), and write a concise project contract. A feasibility study is the next stage. Possible alternative engineering solutions are conceptualised and evaluated using objective criteria functions. Cost, reliability, sustainability and environmental impacts should also be considered in choosing the best approach, which the student should be able to defend in an objective way. All progress work on the design should be documented in notebooks, and written progress reports and oral presentation will be required during the course of the problem. The final report should document the complete design process, the synthesis and analysis of the design, prototyping, experimental testing, refinement of the design, the final product and full performance testing and comparison with the specifications. Projects should where possible originate from industry, and address real problems which the industrial sponsors are confronting. Each student will work individually on a defined part of a design problem, but these parts may be components of a bigger project requirement. Supervisors: Each student will be assigned an academic staff supervisor and an industrial supervisor from the sponsor company where appropriate. In addition to formal written and oral reports, the student should maintain regular informal reporting channels to both supervisors.

Credit Points: 12

Learning Outcomes: In addition to the learning outcomes from the Years 1 to 3 Engineering Design and Practice units, on successful completion of this unit, students are expected to be able to:

- Undertake problem identification, formulation and solution;
- Explain environmental and sustainability issues in problem solution;
- Utilise a systems approach to complex design problems;
- Synthesise solutions, and use analysis to verify designs, using computing tools where appropriate;
- Demonstrate skills in prototyping and testing engineering projects;
- Manage a project, designing to specification, and meeting outcomes and reporting timelines;
- Manage information and documentation;
- Interface with and communicate with other designers who may be working on related project tasks;
- Write a competent feasibility study, progress reports, and a substantial final report;
- Deliver fluently, oral progress presentations, and a high quality final presentation supported with appropriate audio/visual aids.

Class Contact: One hour per week or equivalent for one semester comprising an average ½ hour/week in progress presentations, and ½ hour/week meeting with the project supervisor. Most of the work in this unit will occur outside formal classes.


Assessment: The written contract, written feasibility and progress reports, and oral progress presentations (50%); Prototype and experimental hardware/software demonstrating progress with the design work (30%); The overall quality of the project work (20%).

VEB4200 ENGINEERING DESIGN 4B

Locations: Footscray Park,

Pre-requisites: VEB4100 - ENGINEERING DESIGN 4A

Descriptions: In this unit, students will commence a major design problem resulting in a complete and working outcome which meets the agreed specifications and demonstrates an understanding of professional engineering standards. The student will define the problem, develop functional specifications (in collaboration with the project supervisors), and write a concise project contract. A feasibility study is the next stage. Possible alternative engineering solutions are conceptualised and evaluated using objective criteria functions. Cost, reliability, sustainability and
environmental impacts should also be considered in choosing the best approach, which the student should be able to defend in an objective way. All progress work on the design should be documented in notebooks, and written progress reports and oral presentation will be required during the course of the problem. The final report should document the complete design process, the synthesis and analysis of the design, prototyping, experimental testing, refinement of the design, the final product and full performance testing and comparison with the specifications. Projects should where possible originate from industry, and address real problems which the industrial sponsors are confronting. Each student will work individually on a defined part of a design problem, but these parts may be components of a bigger project requirement. Supervisors: Each student will continue with the academic staff supervisor assigned in VEB4001, and the industrial supervisor from the sponsor company where appropriate. In addition to formal written and oral reports, the student should maintain regular informal reporting channels to both supervisors.

Credit Points: 12
Learning Outcomes: In addition to the learning outcomes from the Years 1 to 3 Engineering Design and Practice units, on successful completion of this unit, students are expected to be able to:

- Undertake problem identification, formulation and solution;
- Explain environmental and sustainability issues in problem solution;
- Utilise a systems approach to complex design problems;
- Synthesise solutions, and use analysis to verify designs, using computing tools where appropriate;
- Demonstrate skills in prototyping and testing engineering projects;
- Manage a project, designing to specification, and meeting outcomes and reporting timelines;
- Manage information and documentation;
- Interface with and communicate with other designers who may be working on related project tasks;
- Write a competent feasibility study, progress reports, and a substantial final report.

Class Contact: One hour per week or equivalent for one semester comprising two hours of lectures/tutorials and one one-hour laboratory.

Credit Points: 12
Learning Outcomes: To be advised.
Class Contact: Three hours per week for one semester comprising lecture, tutorials and laboratories.

Required Reading: To be advised by the lecturer.
Assessment: Examination 100%

**VEC6112 ADVANCED MICROPROCESSORS**

Locations: Footscray Park,

Pre-requisites: A course in C programming.

Descriptions: The subject will provide the student with an appreciation of operating system’s functions and requirements, including real-time operation, and will examine the use of concurrent languages. The subject examines the following topics. Operating system’s functions. Program scheduling. Pipeline design techniques Data and instruction stream. Parallelisms. Contention and arbitration. Message passing techniques. Lock out prevention. Mutual exclusion. Tagged memory systems; cache memory, FIFO, multi port. Multiprocessor operating systems. Process to process or mapping vs process sharing. Diagnostic and performance profiling program. Recovery procedure. Application program and operating system interaction. Throughput measurement. Multiprocessing. Analysis of various multiprocessors, data flow machines and non Neumann machines. RISC Array processors Embedded systems, real time applications.

Credit Points: 12
Learning Outcomes: To be advised.

**VEC6121 OBJECT ORIENTED SOFTWARE**

Locations: Footscray Park,

Pre-requisites: Nil

Descriptions: This subject will study the object oriented approach to software development through the analysis, design and implementation phases of the software life cycle. Its content includes the object oriented (OO) concepts of classes, inheritance, polymorphism, encapsulations; and the use of Object Oriented languages and environments. It applies the techniques to engineering applications.

Credit Points: 12
Learning Outcomes: To be advised.

Class Contact: Three hours per week for one semester comprising two hours lecturers/tutorials and one one-hour laboratory.

Required Reading: To be advised by the lecturer.
Assessment: Assignments 35%; examination 65%.

**VEC6122 OPERATING SYSTEMS AND MULTIPROCESSING**

Locations: Footscray Park,

Pre-requisites: A course in C programming.

Descriptions: The subject will provide the student with an appreciation of operating system’s functions and requirements, including real-time operation, and will examine the use of concurrent languages. The subject examines the following topics. Operating system’s functions. Program scheduling. Pipeline design techniques Data and instruction stream. Parallelisms. Contention and arbitration. Message passing techniques. Lock out prevention. Mutual exclusion. Tagged memory systems; cache memory, FIFO, multi port. Multiprocessor operating systems. Process to process or mapping vs process sharing. Diagnostic and performance profiling program. Recovery procedure. Application program and operating system interaction. Throughput measurement. Multiprocessing. Analysis of various multiprocessors, data flow machines and non Neumann machines. RISC Array processors Embedded systems, real time applications.

Credit Points: 12
Learning Outcomes: To be advised.
Class Contact: Three hours per week for one semester.
Required Reading: To be advised by the lecturer.
Assessment: Assignment, 20%; laboratory, 15%; examination 65%.

**VEC6131 COMPUTER INTERCONNECTION HARDWARE**

Locations: Footscray Park,

Pre-requisites: Nil

Descriptions: The subject develops an understanding of microprocessor interconnection schemes and of the hardware and software aspects of computer networks. The topics covered are: review of synchronous and asynchronous design techniques; characteristics of bus lines and interface design; single-master buses; multiple-master bus; DMA circuits; synchronisation; computer to computer interconnection schemes, principle of operation standardisation and OSI model; point-to-point transfers, protocols, bidirectional links; error handling; links, concentrators and multiplexers; TDM circuits, PCM multiplexing; modern and network (e.g. token ring) interface design.

Credit Points: 12

Learning Outcomes: To be advised.
Class Contact: Three hours per week comprising approximately two hours per week lecturers/tutorials and one one-hour laboratory.
Required Reading: To be advised by lecturer.
Assessment: Final examination 65%; assignments and laboratory work, 35%. Students must attain a satisfactory level of performance in each assessable component to obtain a subject pass.

**VEC6132 DIGITAL SYSTEM MODELLING AND SIMULATION**

Locations: Footscray Park,

Pre-requisites: Nil

Descriptions: The subject will accustom the student with the computer aided design environment, and examines modelling and software techniques applicable to digital design problems. Topics to be studied include computer aided design tools, software, user interfaces, discrete event modelling and modelling languages VHDL; digital logic simulators. FPGA implementation.

Credit Points: 12

Learning Outcomes: To be advised.
Class Contact: Three hours per week comprising approximately two hours per week lecture/tutorial and one one-hour laboratory.
Required Reading: To be advised by the lecturer.
Assessment: Final examination, 65%; assignments and laboratory work, 35%. Students must attain a satisfactory level of performance in each assessable component to obtain a subject pass.

**VEC6141 SOFTWARE ENGINEERING**

Locations: Footscray Park,

Pre-requisites: Approved preliminary course in Software Engineering.

Descriptions: The subject will strengthen the student’s knowledge of concepts required to produce high quality software systems within known limitations of resources using sound engineering principles and effective tools. The subject examines principles of software engineering. The topics covered are part of the software life cycle. Requirements elicitation, requirements analysis and specification.

the use of formal specification languages such as ‘Z’. Analysis and design methods using graphical notations e.g. UML, implementation considerations, testing strategies and construction of test cases; software engineering environments and CASE; tools.

Credit Points: 12

Learning Outcomes: To be advised.
Class Contact: Three hours per week for one semester comprising approximately 70% lectures/tutorials and 30% laboratory.
Assessment: Examination, 65%; laboratory work, tests and assignments 35%. Students must satisfy examiners in each assessable component to pass the subject.

**VEC6142 MANAGING SOFTWARE PROJECTS**

Locations: Footscray Park,

Pre-requisites: VEG5011 Software Engineering.

Descriptions: The subject will develop and improve the skills required to successfully plan and manage software development efforts. The subject content includes: the role of specification in the product life cycle; systems analysis and design; feasibility study and development cycle; the applicability of DP techniques to technical program management; defining software requirements, documentation; preparation of good project plans, size and function point metrics and their use in estimation of time and costs; implementing management controls for design and integration; the use of standard project management techniques and software packages; team working, codes of practice, whole life costing, system support plans; hardware/software integration and testing, product support and maintenance, controlling changes to software and documentation; control of the programming support environment. The assignment and laboratory work consists of design, analysis and management of a large scale software project.

Credit Points: 12

Learning Outcomes: To be advised.
Class Contact: Three hours per week for one semester comprising approximately 65% lectures/tutorials and 35% laboratory.
Required Reading: To be advised by lecturer.
Assessment: Examination, 50%; assignments and project work, 50%.

**VEC6151 DATABASE AND QUERY SYSTEMS**

Locations: Footscray Park,

Pre-requisites: Nil

Descriptions: The subject will further the understanding of the design implementation and applications of database systems. The subject examines introduction to database systems; different database models; examples of current systems; overviews and use of DMBS, physical data organisation, database architecture, SQL, query by example; query optimisation; design theory for relational databases, database integrity and security; implementation issues, distributed systems.

Credit Points: 12

Learning Outcomes: To be advised.
Class Contact: Three hours per week for one semester comprising approximately 70% lectures/tutorials and 30% laboratory.
Required Reading: To be advised by the lecturer.
Assessment: Final examination 65%; assignments, 20%; laboratory work, 15%.
VEC6152 APPLIED KNOWLEDGE SYSTEMS

Locations: Footscray Park.

Pre-requisites: Nil

Descriptions: The subject provides an introduction to Knowledge Based Systems. It gives an overview of expert systems, neural networks, knowledge programming and natural language systems and examines software associated with these. The subject will familiarise the students with a number of techniques for applying knowledge based systems to real world problems in the control, monitoring and planning domains, including how to select appropriate tools to analyse problems.

Credit Points: 12

Learning Outcomes: To be advised.

Class Contact: Three hours per week for one semester. This includes two hours of lecture per week, one hour of tutorial and one hour of laboratory for every two weeks.

Required Reading: To be advised by the lecturer.

Assessment: Tests/Assignments: 35%; Examination: 65%. A pass in each component of assessment is required for a subject pass.

VED4001 ENGINEERING DESIGN & PROJECTS 4A

Locations: Footscray Park.

Pre-requisites: Completed year 3 of the course.

Descriptions: The unit consolidates engineering design experience by requiring each student to undertake an individual engineering design project, selected from a list of projects on offer. Projects are sourced from industry and academia, and span both semesters. In this subject, progress to a viable halfway stage is expected. Each student is supervised by a staff member expert in the area of the project. Oral presentation skills, and report writing ability are further developed from the level attained in third year.

The theory component covers the philosophy of system design, and designing for variability, emphasising the gulf between designing a working prototype, and designing for production. Worst case and Monte Carlo techniques are covered.

Credit Points: 12

Learning Outcomes: To be advised.

Class Contact: 48 hours per semester, consisting of 36 hours of project work and project reporting, and 12 hours of lectures. Students are expected to spend additional non-class time on project work.


Assessment: Project contract 5%, feasibility study report 10%, progress talks 5%, final presentation talk 10%, project stage A report, and project progress and quality 45%, assignments, tests 25%.

VEE3002 INTRODUCTION TO ELECTRICAL POWER SYSTEMS

Locations: To be advised., Footscray

Pre-requisites: VEF2004 Systems and Applications 2D

Descriptions: This unit of study is intended to provide an introduction to electrical power systems. The unit will cover topics of generation, transmission, and distribution systems at introductory levels. Various types of generation systems will be introduced. Different types of transmission/distribution systems and associated gears will be introduced. Models of long, medium and short transmission lines will be introduced to assist in calculation of power, voltage, current and power factor. This has required the syllabus to be presented as a collection of lectures, the emphasis and sequence of which may be varied to accommodate the demands of any concurrent Engineering Design exercises. In addition to delivery by lecture and tutorial, the unit will incorporate laboratory exercises and demonstrations of the concepts and techniques presented.

Credit Points: 6

Learning Outcomes: On successful completion of this unit, students are expected to be able to: develop an understanding of power systems components. Understand the configuration and operation of a power system. Develop skills in calculating the electrical parameters in a power system. Gain knowledge in ways of controlling frequency and voltage in a power system.

Class Contact: 30 hrs of class contact: Two and an half hours per week.


Assessment: Written examination 65% Test 20% Laboratory 15%.

VEE4100 ELECTRIC ENERGY SYSTEMS ANALYSIS AND OPERATION

Locations: Footscray Park.

Pre-requisites: To be advised.

Descriptions:
- Electricity distribution in the deregulated Australian power industry.
Class Contact: 30 hours of class contact comprising 24 hours of lectures/tutorial and 6 hours of laboratory.

Pre-requisites: To be advised.

Descriptions: This subject covers the planning, design and operation of electrical protection systems for the generation, transmission and distribution electric energy: planning, design standards and performance requirements; principles and types of protection systems (over current, impedance, differential, backup, fuses); application to generators, motors, transmission lines, transformers, busbars, and distribution; instrument transformer steady state and transient behaviour; electrical studies for planning and design of protection systems; power system communications for protection application.

Credit Points: 6

Learning Outcomes: On successful completion of this unit, students are expected to be able to:

• Analyse and describe the various insulator technologies.
• Analyse surge propagation and its impact on electrical networks.
• Study circuit breaker operation.

Class Contact: 30 hours of class contact comprising 24 hours of lectures/tutorial and 6 hours of laboratory.

Required Reading: Lecture notes provided.

Assessment: Assignment and Laboratory Exercises 40%; End of semester examination 60%; A pass in each component of assessment is required for a subject pass.

VEE4500 POWER ELECTRONICS

Locations: To be advised., Footscray

Pre-requisites: VEF2004 Systems and Applications 2D

Descriptions: Introduction to the theory, design and analysis of conversion of electric power by means of power electronics, including AC to DC and DC to power converters. The fundamental knowledge of electronic speed control techniques for DC motor drives for different applications. AC/DC single-phase and three-phase power converters: Diode and SCR bridges, rectifiers, DC/DC Switching Mode Power Converters, buck converters and boost converters, Buck-Boost converters. Unipolar and bipolar voltage switching methods. Flyback converters, push pull converters. First quadrant, two quadrant and four quadrant drive. Different electronic speed control techniques for DC motor drives.

Credit Points: 6

Learning Outcomes: On successful completion of this unit, students are expected to be able to:

• Understand the basics and operations of power semiconductor switches.
• Know the building blocks of power electronics conversion.
• Analyse AC/DC and DC/DC power converters.
• Able to analyse and design different types of switching power supplies in different modes of operation.
• Able to demonstrate the knowledge of electronic speed control techniques for DC motor drives for different applications.

Class Contact: 30 hrs of class contact consisting of 2 hrs of Lecture/Tutorial per week and 0.5 hrs of Laboratory per week.


Assessment: Students will be assessed in this unit of study on the basis of an end of semester examination, a mid-semester test and requires satisfactory performance of laboratory based components of this unit.

VEE4700 POWER SYSTEM COMMUNICATION, MONITORING AND INSTRUMENTATION

Locations: To be advised., Footscray

Pre-requisites: Nil

Descriptions: Introduction to communication principles and terminologies used in power systems. Leading global organisations and their standards. Power system automation and integration concepts. *Discussion on architectures, protocols as utilised in power system communication networks. Middleware technologies. Information embedded power systems. Power system security aspects, SCADA and...
On successful completion of this unit, students are expected to be able to:

- To be able to recognise the role of communications in power systems and identify various communication requirements needed in power system protection and distribution networks.
- To have a basic understanding of the use of communication media and architectures in power systems.
- To be able to understand the value of what global organisations like IEC and EPRI bring to the development of new technologies and structures for the advancement of power systems.
- To be able to comprehend system automation and integration concepts.
- To be able to have a basic knowledge about the communication standards, protocols and architectures most commonly employed in power system protection and distribution networks.
- To be able to comprehend the importance of security and contingency analysis in the operation of power system networks.
- To be able to identify the different instrumentation used in power systems.
- To have a basic understanding about operational metering, tariffs and wholesale energy trading.

**VEE6000 RESEARCH PROJECT**

**Locations:** Footscray Park.

**Pre-requisites:** Completion of at least eight units of the course.

**Descriptions:** Each student will undertake an in-depth investigation of a topic allocated in the student’s area of specialisation, over the duration of a semester, under the guidance of an academic supervisor. The student will produce a report and present it to an audience as a publication. In the process the student will be exposed to research related matters such as research methodology, literature surveys, problem definition, feasibility studies, experiment design, modelling and simulation, analysis of results, formulation of conclusions, documentation, and presentation.

**Credit Points:** 48

**Learning Outcomes:** To be advised.

**Class Contact:** Twelve hours per week for one semester comprising three hours per week group seminar, three hours per week group meetings and discussions with fellow researchers and project supervisors, and six hours per week of independent study.

**Required Reading:** To be advised by the supervisor of the project.

**Assessment:** Regular seminar presentations (3 seminars, each of 20 min. duration) 30%; Final Report (Approximately 25,000 words) 50%; Final presentation (of 40 min. duration) 20%.

**VEE6001 RESEARCH PROJECT A**

**Locations:** Footscray Park,

**Pre-requisites:** Completion of at least eight units of the Masters course.

**Descriptions:** The student will undertake an in-depth investigation of a topic (project) allocated in the student’s area of specialisation under the guidance of an academic supervisor.

**Credit Points:** 24

**Learning Outcomes:** On successful completion of this unit, students are expected to be able to:

- Conduct research on a specific project topic using all available resources; books, journals, internet,
- Solve problems in a scientific manner, employing problem solving techniques;
- Plan and manage a project using project management facilities; Microsoft Project Manager.

**Class Contact:** Seventy two (72) hours or equivalent for one semester comprising group seminars, group meetings and discussions with fellow researchers and project supervisors.

**Required Reading:** Reading material will be negotiated in consultation with the supervisor and will be appropriate to the topic under investigation.

**Assessment:** Progress presentations (2 seminars each of 15 min. duration) 30%; final report (Approximately 10,000 words) 50%; final presentation (30 min. duration) 20%. Presentation Progress presentations 30%.
VEE6002 RESEARCH PROJECT B
Locations: Footscray Park,
Pre-requisites: VEE6001 - RESEARCH PROJECT A Completion of at least eight units of the Masters course.
Descriptions: Each student will continue the investigation carried out in VEE6001 to a higher level employing advanced research techniques, analysis of results, formulation of conclusion, documentation, final report writing, and presentation.
Credit Points: 24
Learning Outcomes: On successful completion of this unit students are expected to be able to:
1. Independently conduct research on a specific project topic using all available resources; books, journals, internet,
2. Solve problems in a scientific manner, employing problem solving techniques,
3. Plan and manage a project using project management facilities; Microsoft Project Manager,
4. Write and present professional technical reports.
Class Contact: Seventy two (72) hours or equivalent for one semester comprising of group seminars, group meetings and discussions with fellow researchers and project supervisors.

VEE6050 PROJECT MANAGEMENT PROGRAM
Locations: Footscray Park,
Pre-requisites: To be advised.
Descriptions: To be advised.
Credit Points: 48
Learning Outcomes: To be advised.
Class Contact: For each unit: Three hours per week, comprising lectures, tutorials, seminars, and group activities.

VEE6052 PROJECT MANAGEMENT PROGRAM 1
Locations: Footscray Park,
Pre-requisites: To be advised.
Credit Points: 12

Learning Outcomes: On successful completion of this unit students are expected to be able to:
1. Plan and implement a project life cycle;
2. Integrate, plan and execute a project;

Class Contact:
Thirty six (36) hours for one semester comprising of lectures, tutorials, seminars and group activities.

Required Reading: Reading material will be negotiated in consultation with the supervisor and will be appropriate to the topic under investigation.
Assessment:
Class Test (Two Hours) 20%; Assignment (report not exceeding 5000 words) 20%; Final examination (Three Hours) 60%.
Test Class Test (Two Hours) 20%

VEE6053 PROJECT MANAGEMENT PROGRAM 2
Locations: Footscray Park,
Pre-requisites: VEE6052 - PROJECT MANAGEMENT PROGRAM 1
Credit Points: 24
Learning Outcomes: On successful completion of this unit students are expected to be able to:
1. Plan and implement a project life cycle;
2. Integrate, plan and execute a project;

Class Contact: Seventy Two (72) hours for one semester comprising of lectures, tutorials, seminars and group activities.

Required Reading: Reading material will be negotiated in consultation with the supervisor and will be appropriate to the topic under investigation.
Assessment:
Class Test (Two Hours) 20%; Assignment (report not exceeding 5000 words) 20%; Final examination (Three Hours) 60%.
Test Class Test (Two Hours) 20%

VEE8001 RESEARCH THESIS 1 FULL TIME
Locations: To be advised.
Pre-requisites: To be advised.
Descriptions: This unit of study is part of a research degree program. Information on research topics for the Faculty of Health, Engineering and Science may be found on the faculty website at the following link: http://www.vu.edu.au/Faculties/HealthEngineeringandScience/ResearchandResearchTraining/MajorResearchAreas/
Assessment criteria and Core Research Graduate Attributes can be found on the Office for Postgraduate Research website at the following link: http://www.vu.edu.au/Research/OfficeforPostgraduateResearch/PolicyProcessesandGuidelines/
VEE8002 RESEARCH THESIS 2 FULL TIME

Locations: To be advised.

Pre-requisites: To be advised.

Descriptions: This unit of study is part of a research degree program. Information on research topics for the Faculty of Health, Engineering and Science may be found on the faculty website at the following link: http://www.vu.edu.au/Departments/HealthEngineeringandScience/ResearchandResearchTraining/MajorResearchAreas/

Assessment criteria and Core Research Graduate Attributes can be found on the Office for Postgraduate Research website at the following link: http://www.vu.edu.au/Research/OfficeforPostgraduateResearch/PolicyProcessesandGuidelines/

Credit Points: 48

Learning Outcomes: To be advised.

Class Contact: To be advised.

Required Reading: To be advised.

Assessment: To be advised.

VEE8011 RESEARCH THESIS 1 PART TIME

Locations: To be advised.

Pre-requisites: To be advised.

Descriptions: This unit of study is part of a research degree program. Information on research topics for the Faculty of Health, Engineering and Science may be found on the faculty website at the following link: http://www.vu.edu.au/Departments/HealthEngineeringandScience/ResearchandResearchTraining/MajorResearchAreas/

Assessment criteria and Core Research Graduate Attributes can be found on the Office for Postgraduate Research website at the following link: http://www.vu.edu.au/Research/OfficeforPostgraduateResearch/PolicyProcessesandGuidelines/

Credit Points: 24

Learning Outcomes: To be advised.

Class Contact: To be advised.

Required Reading: To be advised.

Assessment: To be advised.

VEE8012 RESEARCH THESIS 2 PART TIME

Locations: To be advised.

Pre-requisites: To be advised.

Descriptions: This unit of study is part of a research degree program. Information on research topics for the Faculty of Health, Engineering and Science may be found on the faculty website at the following link: http://www.vu.edu.au/Departments/HealthEngineeringandScience/ResearchandResearchTraining/MajorResearchAreas/

Assessment criteria and Core Research Graduate Attributes can be found on the Office for Postgraduate Research website at the following link: http://www.vu.edu.au/Research/OfficeforPostgraduateResearch/PolicyProcessesandGuidelines/

Credit Points: 24

Learning Outcomes: To be advised.

Class Contact: To be advised.

Required Reading: To be advised.

Assessment: To be advised.

VEF1001 ENABLING SCIENCES 1A

Locations: Footscray Park,

Pre-requisites: Year 12 mathematics or its equivalent.

Descriptions: Basic algebra, including index, log laws, indicial and log equations, algebraic expansions; Functions, straight line, parabola, circle etc. Mod function, Domain, range, inverse functions; Trig. Functions and their graphs, period amplitude, degrees radians. Basic trig identities, Inverse Trig functions. Converting $e^{2x}$ to single Sin, Cosine terms; Limits, continuity, differentiation, rules, higher derivatives, implicit differentiation. Tangents and Normals; Parametric differentiation, derivatives of logs and exponentials. Rates of change, maximum and minimum problems. Trig and inverse trig derivatives, logarithmic differentiation. Introduction to integration. Fundamental theorem of Integral Calculus. Substitution rule. Areas, Mean values, Root mean square. Methods of integration, partial fractions, simple integration by parts; Introduction to differential equations, separation of variables, population growth, air resistance; Complex numbers Physical Units and Dimensions: Physical quantities, system of units and standards, dimensions, unit conversion, significant figures. Kinematics and Mechanics: Scalars and vectors, displacement, velocity and acceleration, motion in one and two dimensions, force, Newton's laws of motion, friction, work and energy, momentum and conservation laws, impulse and collisions, rotational motion. Waves: SHM, damped harmonic motion, forced oscillations and resonance, oscillatory motion, mechanical and acoustic waves, superposition and standing waves, Doppler effect, beats, sound intensity levels.

Credit Points: 12

Learning Outcomes: On successful completion of this unit, students are expected to be able to:

- Perform basic differentiation and integration
- Calculate rates of change in maximum and minimum problems
- Perform integration by parts
- Use Newton's laws to calculate displacement, velocity and acceleration
- Apply the rules of conservation of energy and momentum.

Class Contact: 60 hours of lectures/tutorials per semester.


Assessment: Class tests 30% End of semester examinations 70%
some convergence tests; Simple power series and the Macclaurin series; Partial differentiation, algebraic, trig, exp, and log functions. Rules; Partial differentiation, conditions for max/min. Simple problems; Latte to second order constant coefficient, homogeneous D.s. Three types of solutions via the auxiliary equation.

Credit Points: 12

Learning Outcomes: On successful completion of this unit, students are expected to be able to:
• Have an understanding of statistics including the Normal, exponential, Poisson and Hyper geometric distributions.
• Have an understanding of Electric and magnetic fields and calculate the forces acting on charged particles
• Understanding of wave/particle duality and the Bohr model of the atom.

Class Contact: 60 hours of lectures/tutorials per semester.


Assessment: Class tests 30%. End of semester examinations 70%.

VEF1003 ELECTRICAL FUNDAMENTALS 1A

Locations: Footscray Park,

Pre-requisites: Year 12 mathematics or its equivalent.


Credit Points: 12

Learning Outcomes: On successful completion of this unit, students are expected to be able to:
• To have a basic understanding of the concepts, units and interrelationship between electric charge, voltage and power.
• To understand and be competent in the application of Kirchhoffs Laws for circuit analysis
• To be competent in the application of the Nodal Voltage Method, and the concept of equivalence (including Thevenins and Nortons Theorems) to the solution of linear DC circuit analysis.
• To understand the different types of gain, and input and output resistance of an amplifier.
• To be able to analyse the following ideal operational amplifier circuit applications: inverting and non-inverting amplifier, buffer, inverting summer, comparator, and difference amplifier. To understand some of the uses of these circuits.
• To understand how a dependent source may be used to model the finite voltage gain and finite input resistance of a real operational amplifier
• To understand that the operational amplifier voltage range is limited by the DC supply rails, and to appreciate that its gain is dependent upon the signal frequency.
• To understand the differences between ideal linear and real resistors.
• To understand from a components Volt-ampere characteristic whether or not the device can sink or source power, is linear or non-linear, is bilateral or non-bilateral.
• To be able to use Volt-ampere characteristics to find the voltage, current or power of a component connected to a Thevenin Equivalent Circuit.
• To understand the definition and units of capacitance. To know the physical nature of stray capacitance and of capacitors.
• To be able to solve CR charge/discharge transient analysis problems. To appreciate some applications of this type of analysis.
• To understand how a capacitor acts as an energy storage component.
• To have a basic understanding of a TRU power supply, including ripple voltage calculations.
• Write truth tables, construct logic expressions, and minimize expressions using Boolean algebra or Karnaugh maps.
• Design and construct combinational logic circuits for simple applications. Write C++ program to solve simple problems that may include use of selection and repetition structures, create single dimensional arrays and store and manipulate data.

Class Contact: 60 hours of lectures/tutorials per semester.


Assessment: Class tests 30%. End of semester examination 70%.

VEF1004 ELECTRICAL FUNDAMENTALS 1B

Locations: Footscray Park,

Pre-requisites: VEF1003 Electrical Fundamentals 1A or equivalent.


Credit Points: 12

Learning Outcomes: On successful completion of this unit, students are expected to be able to:
• To be able to apply the Principle of Superposition to circuit analysis, and be aware of those circuits where it is not applicable.
• To be able to convert data sheet characteristics of an IC amplifier into a network model. To be able to use the Principle of Superposition to examine the significance of these characteristics in linear applications of the amplifier.
• To be able to analyse linear AC circuits.
• To be able to calculate the RMS value of periodic waveforms.
To have gained an introductory understanding of electromagnetism sufficient to underpin the solution of circuits containing self-inductors

To know the definition of resonance.

To understand the behaviour of AC circuits both at resonance, and at frequencies either side of the resonant frequency.

To be able to convert freely between impedance and admittance, as required by given problems.

To be able to calculate the attenuation vs frequency response of first order passive filters.

To be able to calculate the various measures of power associated with AC power circuits.

To understand how given limitations of real operational amplifiers may manifest themselves in AC circuit applications.

Design and construct sequential logic digital circuits using D and J-K flip-flops.

Use state diagrams and state tables for design.

Write C++ programs using user defined functions and pointers and user defined data structures. Write/read data to/from text files.

Class Contact: 60 hours of lectures/tutorials per semester.

Required Reading: Ives, R Electrical and Electronic Engineering, Victoria University.

Assessment: Class tests 30%. End of semester examination 70%.

VEF2001 LINEAR SYSTEMS AND MATHEMATICS 2A

Locations: Footscray Park,

Pre-requisites: VEF1002 Enabling Sciences 1B and VEF1004 Electrical Fundamentals 1B.


Credit Points: 12

Learning Outcomes: On successful completion of this unit, students are expected to be able to:

• perform time-domain analysis of linear time-invariant systems using Laplace transforms,
• perform frequency-domain analysis of linear time-invariant systems using Fourier series and Fourier transforms,
• apply linear algebra to find trajectories of linear systems modelled as a system of first-order linear ordinary differential equations with constant coefficients,
• employ simple MATLAB commands and Simulink to analyse linear time-invariant systems.

Class Contact: Linear Systems component: Three hours of lecture and problem solving per week for twelve weeks, for one semester. Total 36 hours. Mathematics component: Two hours of lectures and problem solving per week for twelve weeks, for one semester. Total 24 hours.


Assessment: This subject is designed to complement our Engineering Design subjects and as such will have significant formative assessment components. In addition there will be summative assessment in the form of multiple “skills audits” to account for 30% and end of semester examinations accounting for 70% of the total marks. The end of semester examinations include a three-hour Linear Systems Component Examination (accounting for 35% of the total marks) and a three-hour Mathematics Component Examination (accounting for 35% of the total marks).

VEF2002 SYSTEMS AND MATHEMATICS 2B

Locations: Footscray Park,

Pre-requisites: VEF 2001 Linear Systems and Mathematics 2A


Credit Points: 12

Learning Outcomes: On successful completion of this unit, students are expected to be able to:

• state and differentiate the purposes and requirements of communication systems and control systems,
• perform elementary time-domain and frequency-domain analyses of simple communication systems and control systems,
• employ simple MATLAB commands and Simulink to analyse simple communication systems and control systems.

Class Contact: 60 hours of lectures/tutorials per semester.


Assessment: This subject is designed to complement our Engineering Design subjects and as such will have significant formative assessment components. In addition there will be summative assessment in the form of multiple “skills audits” to account for 30% and end of semester examinations accounting for 70% of the total marks. The end of semester examinations include a three-hour Systems Component Examination (accounting for 40% of the total marks) and a three-hour Probability and Statistics Component Examination (accounting for 30% of the total marks).

VEF2003 SYSTEMS AND APPLICATIONS 2C

Locations: Footscray Park,

Pre-requisites: VEF1003 Electrical Fundamentals 1A or equivalent

Descriptions: Content Analog Systems:

PN diodes, electrical characteristics, applications. Zener diodes. Bipolar transistors, characteristics, small signal model analysis and design. MOSFET devices, characteristics, configurations and use in amplifier design. Voltage regulators, series and shunt types.
Digital Systems:
Data path elements including encoders, decoders, comparators, multiplexers, demultiplexers, multi-mode synchronous counters registers, shift registers, arithmetic circuits and ROMs. Applications of data path elements. Data path element function, description in VHDL and synthesis onto programmable logic devices.

Computer Programming:
Pointers and the use of pointers in data storage, manipulation and data structures. The creation and use of (classes). Binary files and random file input/output. An introduction to image processing using bitmap image files.

Microprocessor Systems:
The architectural structure of a simple 8-bit microprocessor/microcontroller. Program and data organization, programmers model, register sets, instruction set and addressing modes. Assembly language programming. Interfacing via external ports; timers, interrupts and special function peripherals.

Credit Points: 12

Learning Outcomes: On successful completion of this unit, students are expected to be able to:

- Design and implement combinational and sequential data processing elements using VHDL with PLDs and manufacturers components.
- Analyse an engineering problem that requires a computational solution; construct suitable (classes) and functions for an algorithmic solution. Code and test the solution.
- Create the hardware and software requirements for an engineering task requiring a small microprocessor based system. Design, build and test the system including the hardware and software components.
- Analyse and design simpler rectifier based power supplies and small signal amplifiers.

Class Contact: 60 hours of lectures/tutorials per semester.


Assessment: This subject is designed to complement our Engineering design subjects and as such will have significant formative assessment components. In addition there will be summative assessment in the form of multiple “skills audits” to account for 30% and two 3 hour end of semester examinations accounting for 70% (35%+35%) of the total marks.

VEG3001 ANALOGUE ELECTRONICS A

Locations: To be advised., Footscray

Pre-requisites: VEF2003 Systems and Applications 2C

Descriptions: This unit of study covers analogue electronic circuits analysis and design techniques commonly used in engineering systems. The unit is designed to provide support for students requiring knowledge of electronic circuits design in a concurrently studied Engineering Design unit. The subject includes the theory and implementation of feedback techniques for circuit stability. Differential amplifiers with active loads and multistage amplifiers. The design requirements of biquadratic filters, output stage/power amplifiers of an electronic systems. This has required the syllabus to be presented as a collection of lectures, the emphasis and sequence of which may be varied to accommodate the demands of any concurrent PBL exercises. In addition to delivery by lecture and tutorial the unit will incorporate laboratory exercises and demonstrations of the concepts and techniques presented.

Credit Points: 6

Learning Outcomes: The Learning outcomes of this unit of study will depend upon the lectures presented, as required to support concurrent Engineering Design exercises.

On successful completion of this unit, students are expected to be able to:

- To have experience in performing analysis of most common circuits used in electronic systems.
- To have experience in performing design calculation of discrete electronic circuits used in different electronic systems.
- To learn feedback techniques required to insure stabilise function of electronic circuits.

MEC4006 POWER ELECTRONICS

Locations: To be advised.

Pre-requisites: VEF2003 Systems and Applications 2C, VEG3001 Analogue Electronics A

Descriptions: This unit of study covers the analysis and design of power electronic circuits. The unit includes the theory and practical implementation of diodes, transistors, thyristors, and integrated circuits for power control. The unit emphasizes the design and analysis of power electronic circuits for energy conversion.

Credit Points: 6

Learning Outcomes: On successful completion of this unit, it is expected that students will be able to:

- Design and implement power electronic circuits for energy conversion.
- Analyse power electronic circuits and perform circuit stability analysis.
- Design and build power electronic circuits.
- Understand the practical aspects of power electronic circuits.

Class Contact: 60 hours of lectures/tutorials per semester.


Assessment: This subject is designed to complement our Engineering design subjects and as such will have significant formative assessment components. In addition there will be summative assessment in the form of multiple “skills audits” to account for 30% and two 3 hour end of semester examinations accounting for 70% (35%+35%) of the total marks.

VEF2004 SYSTEMS & APPLICATIONS 2D

Locations: Footscray Park,

Pre-requisites: VEF2003

Descriptions: Analog Systems:
Differential amplifiers, models of operation, gain, CMRR; design for performance characteristic. Frequency response of amplifiers; an introduction to wide-band and high frequency amplifier design. Oscillators, RC, LC, phase shift, integrator and crystal types. Data converters; dual-slope, successive approximation and (flash) type. Switching regulators and power supplies.

Digital Systems:
Synchronous state machine analysis and design. Moore and Mealy machines. State optimization and reduction techniques. Races and hazards; effects and elimination. An introduction to the algorithmic state machine; gate level synthesis and implementation in VHDL. Simple PLD architectures; macro cells, clocking and output options, limitations.

Mechanical and Electromagnetic Fundamentals:

Credit Points: 12

Learning Outcomes: On successful completion of this unit, it is expected that students will be able to:

- Analyse a range of circuit types and assess the circuit performance.
- Design circuits to meet performance criteria and select suitable components for circuit realization.
- Implement optimal state machines for a range of electronic engineering applications.
- Apply a system level approach to digital design using the algorithmic state-machine design paradigm.
- Be able to appreciate fundamentals of mechanical and electromagnetic energy conversion.
- Be able to analyse simple power systems containing DC machines and transformers.

Class Contact: 60 hours of lectures/tutorials per semester.


Assessment: This subject is designed to complement our Engineering design subjects and as such will have significant formative assessment components. In addition there will be summative assessment in the form of multiple “skills audits” to account for 30% and two 3 hour end of semester examinations accounting for 70% (35%+35%) of the total marks.
On successful completion of this unit, students are expected to be able to:

• To learn some techniques required for frequency compensation of electronic circuits.
• To be able to use Multisim/Pspice, to analyse the behaviour of any electronic circuits and system.
• To be able to perform rapid prototyping of a specified electronic circuit.

Class Contact: 2.5 hours per week consisting of lectures/tutorials and laboratory

Required Reading: Sedra A & Smith K. Microelectronic Circuits, 5th edition, Oxford University Press, 2004. Also extra materials to be provided upon commencement of subject, and dependent upon demands generated by any concurrent Engineering Design exercises.

Assessment: Students will be assessed in this unit of study on the basis of an end of semester examination 65%, mid-semester test 15% and satisfactory performance of laboratory based exercises 20%

VEG3002 ANALOGUE ELECTRONICS B

Locations: To be advised, Footscray

Pre-requisites: VEG3001 Analogue Electronics A.

Descriptions: This unit of study covers analogue electronic Integrated Circuits functions and applications in electrical engineering systems. The unit is designed to provide support for students requiring knowledge of electronic circuits design in a concurrently studied PBL unit. This has required the syllabus to be presented as a collection of lectures, the emphasis and sequence of which may be varied to accommodate the demands of any concurrent PBL exercises. In addition to delivery by lecture and tutorial the unit will incorporate laboratory exercises and demonstrations of the concepts and techniques presented.

Credit Points: 6

Learning Outcomes: The Learning outcomes of this unit of study will depend upon the lectures presented, as required to support concurrent PBL exercises.

On successful completion of this unit, students are expected to be able to:

• Perform analysis of most common circuits used in electronic systems;
• Perform design calculation of discrete electronic circuits used in different electronic systems;
• Use feedback techniques required to insure stabilise function of electronic circuits;
• Use techniques required for frequency compensation of electronic circuits;
• Use Multisim/Pspice, to analyse the behaviour of any electronic circuits and system;
• Perform rapid prototyping of a specified electronic circuit.

Class Contact: 30 hours of class contact per semester. 2 hours of Lecture/Tutorial and 0.5 hours of laboratory exercises per week.


Assessment: Students will be assessed in this unit of study on the basis of an end of semester examination (65%), mid-semester test (15%) and satisfactory performance of laboratory based exercises (20%). Evaluation of CGA in unit (as %): Level 1(%) Level 2(%) Level 3(%) Problem Solving 10 30 10 Using Information 10 30 10 Communication Oral 0 0 0 Communication Written 0 0 0 Professional - Autonomous 0 0 0 Professional - Collaborative 0 0 0 Social & Cultural Diversity 0 0 0

VEG4100 DIGITAL SIGNAL PROCESSING A

Locations: Footscray Park,

Pre-requisites: VEF2001 Linear Systems and Mathematics 2A


Credit Points: 6

Learning Outcomes: On successful completion of this unit, students are expected to be able to:

• perform time and frequency domain analysis of discrete-time linear signal processing systems,
• design simple FIR and IIR filters,
• perform spectral analysis on sampled signals with DFT via FFT.

Class Contact: 30 hours class contact comprising 24 hours of lectures/tutorial and 6 hours of laboratory.


Assessment: Laboratory assessment 30%; End of semester examination 70%.

VEG4101 PROFESSIONAL PRACTICE 4A

Locations: Footscray Park,

Pre-requisites: VEB3200 - ENGINEERING DESIGN AND PRACTICE 3B

Description: Professional Engineering Ethics. Engineers Australia Code of Ethics, IEEE Code of Ethics. Standards, codes of practice, and statutory requirements for the profession. Social responsibility. Environmental and sustainability considerations in engineering design and management. The role of the engineering institutions. Lifelong professional development, networking, contributing to the community. Basic business principles. Accounting, book keeping methods. Depreciation. Taxation. Understanding company reports. Career choices: (i) working for a salary small company or large company? Developing a long term career plan. Career choices: (ii) starting your own business consulting, trading, manufacturing. Innovation and enterprise. (Note: This topic will be developed in more detail in VEG4202). Writing an effective resume and job application. Winning at the job interview. Interview training. Mock job application, mock job interview, with oral and video evaluation and feedback.

Credit Points: 12

Learning Outcomes: On successful completion of this unit, students are expected to be able to:

• Discuss the interactions between engineering systems and their social, cultural, environmental, economic and political context;
• Discuss the role of engineering in society;
• Display a commitment to professional and ethical responsibilities;
• Explain the need for lifelong learning and professional development;
• Interact with people in other disciplines and professions to broaden knowledge, and to achieve multidisciplinary outcomes with a properly integrated engineering contribution;
• Describe general business principles currently in operation;
• Describe the process of applying for jobs and the process of selection.

Class Contact: Sixty (60) hours or equivalent for one semester comprising formal and informal class work.

Required Reading: There are no prescribed readings for this unit. Students will be guided by the unit co-ordinator to material relevant to the unit.

Assessment: A series of assignments (class exercises and projects), tests and examination (100%).

VEG4202 PROFESSIONAL PRACTICE 4B

Locations: Footscray Park,
Pre-requisites: VEB3200 - ENGINEERING DESIGN AND PRACTICE 3B


Credit Points: 12

Learning Outcomes: On successful completion of this unit, students are expected to be able to:
• Explain the current commercial, legal and regulatory environment in which the professional engineer works;
• Describe the legal and regulatory requirements for starting a business;
• Describe how to prepare a business plan;
• Explain the financial system, the way financial institutions operate, and the requirements for successfully securing funding;
• Explain how to participate in the tendering process, and manage risk in tendering;
• Discuss intellectual property issues, and methods of protecting intellectual property;
• Explain how to use project management techniques as applied to an engineering undertaking;
• Discuss the importance of workplace safety, and its regulatory and insurance aspects.

Class Contact: Sixty (60) hours or equivalent for one semester comprising formal and informal class work.

Required Reading: There are no prescribed readings for this unit. Students will be guided by the unit co-ordinator to material relevant to the unit.

Assessment: A series of assignments (class exercises and projects), tests and examination (100%).

VEH3001 DIGITAL SYSTEM DESIGN A

Locations: To be advised., Footscray
Pre-requisites: VEF2004 - SYSTEMS & APPLICATIONS 2D

Descriptions: Design simple and complex asynchronous state machines and implement them on PLDs. Apply a sound technical design approach, manage the design complexity in an efficient manner and implement the solution with modern software development tools and devices.

Credit Points: 6

Learning Outcomes: The Learning outcomes of this unit of study will depend upon the lectures presented, as required to support concurrent Engineering Design exercises.

On successful completion of this unit, students are expected to be able to:
• Design and implement a digital system containing at the order of 20,000 logic gate elements.
• Apply a sound technical design approach, manage the design complexity in an efficient manner and implement the solution with modern software development tools and devices.

Class Contact: 30 hours of class contact. 2.5 hours per week - 2 hours lecture/tutorial and 0.5 hours laboratory work integrated with VEB3002 as experimental workshop.


Assessment: End of semester examination 70%, a mid-semester test and assignments 20% and laboratory 10%.

VEH3002 DIGITAL SYSTEM DESIGN B

Locations: To be advised., Footscray
Pre-requisites: VEF2003 - SYSTEMS AND APPLICATIONS 2C


Credit Points: 6

Learning Outcomes: The Learning outcomes of this unit of study will depend upon the lectures presented, as required to support concurrent Engineering Design exercises.

On successful completion of this unit, students are expected to be able to:
• Design simple and complex asynchronous state machines and implement them on PLDs.
• Apply a sound technical design approach, manage the design complexity in an efficient manner and implement the solution with modern software development tools and devices.

Class Contact: 30 hours of class contact. 2.5 hours per week - 2 hours lecture/tutorial and 0.5 hours laboratory work.


Assessment: End of semester examination 70%, a mid-semester test and assignments 20% and laboratory 10%.
On successful completion of this unit, it is expected that students will be able to:

- design, build and implement an embedded system using a modern microcontroller,
- code in a high level language that interfaces to appropriate signal acquisition and actuating devices and meets performance requirements in terms of functionality (logical and timing) and cost.

Learning outcomes: The Learning outcomes of this unit of study will depend upon the lectures presented, as required to support concurrent Engineering Design exercises.

On successful completion of this unit, it is expected that students will be able to:

- analyse a complex embedded computer control task and formulate a multitasking solution, and
- implement the solution using a high level language, supported by a commercial real time kernel.

Credit Points: 6

Assessment: End of semester examination (80%). Mid-semester test laboratory (20%)

VEH3004 REAL TIME AND MULTITASKING COMPUTER SYSTEMS

Locations: To be advised, Footscray
Pre-requisites: VEH2003 - SYSTEMS AND APPLICATIONS 2C

Descriptions: This unit of study provides an introduction to real time multitasking systems through the use of a real time kernel and to provide support for students requiring knowledge of embedded systems in a concurrently studied Engineering Design unit. The aim of the unit is to extend students knowledge of computer systems into time critical and very complex applications using a structured design approach and the use of a real time kernel. Hardware and software system aspects are considered along with means of managing system complexity. In addition to lectures and tutorials the unit will incorporate laboratory exercises and demonstrations of the concepts and techniques presented.

Credit Points: 6

Learning outcomes: The Learning outcomes of this unit of study will depend upon the lectures presented, as required to support concurrent Engineering Design exercises.

On successful completion of this unit, students are expected to be able to:

- Design and implement a single chip digital system containing multiple microprocessors and dedicated hardware operating multiple tasks in a real-time manner.
- Other outcomes will be in the management of design complexity for 1 million+ gate designs, economic and manufacturing considerations.

Class Contact: 30 hours of class contact consisting of 2.5 hours per week - 2 hours lecture/tutorial and 0.5 hours laboratory work per week.


Assessment: End of semester examination 80%, a mid-semester test and laboratory 20%.

VEH6001 HDL AND HIGH LEVEL SYNTHESIS

Locations: To be advised, Chipskills Partner Universities
Pre-requisites: Completed Digital Systems at undergraduate level or equivalent.


Credit Points: 12

Learning outcomes: To be advised.

Class contact: Four hours per week for one semester comprising two hours per week lectures and two hours per week of laboratory exercises and project.
VEH6002 IC DESIGN

Locations: To be advised., Chipskills Partner Universities

Pre-requisites: Completed Digital Systems at undergraduate level or equivalent.

Descriptions: Overview of MOS and sub-micron technology, scaling and signal integrity, IC design techniques. CMOS cell design: device-level design constraints, gate design, paras transistor circuits, sequential circuits, mask level design. Layout considerations, design rules and mask level design. Circuit optimisation techniques. ASIC and custom design, synchronous system design. Timing issues in VLSI circuit design. Design of VLSI system sub-systems: Arithmetic and logic processing elements, adders, counters, l/Ds, buffers, data path design and layout, etc. Chip floor planning. Basic analog building blocks. Design trade-offs-cost, power and performance. Testability and yield.

Credit Points: 12

Learning Outcomes: Upon successful completion of this unit of study the students are expected to have:

• Gained an appreciation of and apply industry standards to digital system design methodologies
• Gained knowledge of and applied VHDL coding styles for synthesis, data structure and state machines and advanced timing issues in high speed digital systems
• Developed skills in the use of EDA design for digital system design

Class Contact: Four hours per week for one semester comprising of lectures and laboratory exercises.


Assessment: Assignment and laboratory exercises, 30%; project, 40%; and final examination, 30%.

VEH6006 EMERGING TOPICS IN IC DESIGN

Locations: To be advised., Chipskills Partner Universities

Pre-requisites: Nil.

Descriptions: New technologies such as: Silicon carbide high-power devices, Quantum based devices, quantum wells and quantum dots Nanometer MOSFETs, Wide band gap materials and devices, Plasma wave electronics, Ferro electric devices. Overview of new process technologies. Deep sub-micron technology and noise. Ultra-high-speed devices, including microwave and optical devices. New Systems-Level Architectures, such as: Nanowire arrays, Neuromorphic architectures, Reconfigurable architectures, Wafer-scale systems, Memory systems. New EDA tools and future technology projections. EMC: regulations, measurement and testing, Design issues related to EMC.

Credit Points: 12

Learning Outcomes: To be advised.

Class Contact: Four hours per week for one semester comprising two hours per week lectures and two hours per week of workshops and seminars.


Assessment: Assignments, 30%; seminars, 40%; and research project, 30%.

VEH6007 ADVANCED VLSI DESIGN

Locations: To be advised., Chipskills Partner Universities

Pre-requisites: VEH6002 or equivalent.


Credit Points: 12

Learning Outcomes: To be advised.

Class Contact: Four hours per week for one semester comprising one hour per week lectures and three hours per week of laboratory exercises and project.
Assessment: Assignment and laboratory exercises, 30%; project, 50%; and final examination, 20%.

VEH6008 VLSI DIGITAL SIGNAL PROCESSING SYSTEMS

Locations: To be advised. Chipskills Partner Universities
Pre-requisites: Completed DSP course at undergraduate level.


Credit Points: 12
Learning Outcomes: To be advised.
Class Contact: Four hours per week for one semester comprising lectures and laboratory exercises.

Assessment: Assignment and laboratory exercises, 30%; project, 40%; and final examination, 30%.

VEH6009 RELIABILITY AND TESTABILITY IN IC DESIGN

Locations: Footscray Park.
Pre-requisites: VEH6001 - HDL AND HIGH LEVEL SYNTHESIS OR equivalents.


Credit Points: 12
Learning Outcomes: Upon successful completion of this unit of study, students are expected to have:

- Developed an appreciation of reliability issues related to microelectronic devices and integrated circuits
- Developed an understanding of circuit testability issues and design for testability.
- Developed and applied knowledge in fault modelling and testing methodologies
- Developed an appreciation for system level testing
- Developed skills in the use of EDA design for test tools including automatic test pattern generation.

Class Contact: Four hours per week for one semester comprising lectures and laboratory exercises.

Assessment: Assignment and laboratory exercises, 60%; and final examination, 40%.

VEH6010 INTRODUCTION TO MICROSYSTEM TECHNOLOGY

Locations: To be advised. Chipskills Partner Universities
Pre-requisites: Nil.


Credit Points: 12
Learning Outcomes: To be advised.
Class Contact: Four hours per week for one semester comprising two hours per week lectures and two hours per week of laboratory exercises.

Assessment: Assignments, 20%; laboratory exercises, 30% project, 30 and final examination, 20%.

VEH6011 INTRODUCTION TO SEMICONDUCTOR DEVICE FABRICATION

Locations: To be advised. Chipskills Partner Universities
Pre-requisites: Nil.

Descriptions: Fundamental principles of fabrication processes, physical and chemical models for crystal growth; oxidation, ion implantation, etching, deposition, lithography and metallisation. Emphasis on practical aspects of silicon device fabrication, including wafer cleaning, photolithography, etching, oxidation, diffusion, ion implantation, chemical vapour deposition, physical sputtering and wafer testing, imperfections in semiconductors, crystal growth, solid solubility, alloying and diffusion, ion implantation, oxide masking, and epitaxy. Practical and fundamental limits to the evolution of the technology of MOS and bipolar devices. How are integrated circuits fabricated and what future changes are likely? The implications for device performance caused by material properties and fabrication techniques. Fabrication techniques for bipolar and MOS-devices, and the electrical performance of devices based on these techniques. Comparison of fabrication technologies for silicon and gallium arsenide devices. Processes and fabrication equipment to be studied will include oxidation/diffusion, CVD reactors, photolithography, plasma etching, vacuum evaporator, ion implantation, etc. Introduction to computer modelling of processing steps such as etching, lithography, diffusion, implantation (eg SUPREME).

Credit Points: 12
Learning Outcomes: To be advised.
Class Contact: Four hours per week for one semester comprising two hours per week lectures and two hours per week of laboratory exercises.

Assessment: Assignments, 20%; laboratory exercises, 30%; and final examination, 50%.
VEH6013 PROJECT MANAGEMENT AND ENTREPRENEURSHIP

Locations: To be advised., Chipskills Partner Universities

Pre-requisites: Nil


Credit Points: 12

Learning Outcomes: To be advised.

Class Contact: Four hours per week for one semester. Assessment Assignments, 20%; seminar presentations, 10%; project, 30%; and final examination, 40%.

Required Reading: Current available text book - students to be advised. Appropriate journal papers.

Assessment: To be advised.

VEH6014 RF AND MIXED SIGNAL DESIGN

Locations: To be advised., Chipskills Partner Universities

Pre-requisites: Completed Analog Electronics at undergraduate level.

Descriptions: Basic concepts of wireless communication systems design. Transceiver architectures. VLSI design issues and layout techniques in wireless transceiver design. Radio circuits, LNAs, oscillators, mixers, limiters, phase detectors, frequency synthesizers, PLLs and power amplifiers. Low voltage low power design techniques and design flow for analog and mixed signal circuits and systems. OpAmps, comparators, A-to-D and D-to-A conversion circuits. Noise analysis and design tradeoffs - cost, power and performance. Students will develop hands-on experience in design, simulation, verification and implementation using industry standard EDA tools.

Credit Points: 12

Learning Outcomes: To be advised.

Class Contact: Four hours per week for one semester comprising two hours per week lectures and two hours per week of laboratory exercises and project.


Assessment: Assignment and laboratory exercises, 30%; project, 50%; and final examination, 20%.

VEH6016 VERILOG HDL

Locations: Footscray Park,

Pre-requisites: Completed Digital Systems at undergraduate level or equivalent.

Descriptions: The role of HDL in design, Top-down introduction to Verilog, Verilog for description of logic circuits, Verilog language constructs, behavioural modelling, logic level modelling, concurrent process and switch level modelling. Timing analysis, synthesis and test benches.

Credit Points: 12

Learning Outcomes: To be advised.

Class Contact: Four hours per week for one semester, comprising of two hour lecture and two hours of tutorial/laboratory and project work.


Assessment: Assignments and laboratory exercises, 20%; project, 30%; final examination, 50%.

VEH6017 DIGITAL SYSTEM DESIGN WITH VERILOG HDL

Locations: Footscray Park,

Pre-requisites: To be advised.

Descriptions: Introduction to Verilog and digital systems design for VLSI, combinational and sequential circuits, design verification, algorithmic state machine design, finite state machine specifications in Verilog, hierarchical modelling concepts, synchronous and asynchronous systems, pipelined architectures, processor architectures, clocks timing and clock distribution, synthesis and advanced concepts in brief.

Credit Points: 12

Learning Outcomes: To be advised.

Class Contact: Four hours per week for one semester, comprising of two hour lecture and two hours of tutorial/laboratory and project work.


Assessment: Assignments and laboratory exercises, 35%; project, 33%; final examination, 32%.

VEH6018 ANALOG & MIXED SIGNAL DESIGN

Locations: Footscray Park,

Pre-requisites: To be advised.

Descriptions: The design of CMOS analog and mixed-signal integrated circuits is covered. Design concepts of high speed low power amplifiers, filters, sample and hold circuits, comparators, digital to analog and analog to digital converters are fully analysed. Noise and performance analysis and design tradeoffs - cost, power and performance. Students will develop hands-on experience in design, simulation, verification and implementation using industry standard EDA tools.

Credit Points: 12

Learning Outcomes: To be advised.

Class Contact: Four hours per week for one semester, comprising of one hour lecture and three hours of laboratory and project work.


Assessment: Assignments and laboratory exercises, 20%; project, 33%; final examination, 33%.

VEH6020 MINOR PROJECT

Locations: To be advised., Chipskills Partner Universities

Pre-requisites: EEH6001, EEH6002 and EEH6003

Descriptions: It is expected that the majority of industry-based students will undertake projects as part of their normal employment, where relevant opportunities exist and suitable resources and supervision can be guaranteed. A project can be structured to be the equivalent of two units of study. Projects would be expected to demonstrate a good working knowledge in chip design and implementation. Students must demonstrate their ability to integrate and draw upon their coursework studies relevant to the project. A dissertation of no less than 10000 words must be submitted and will be examined by one examiner selected by the examining panel for this module. Commercial in-confidence programs can be undertaken, with appropriate restrictions on publication and choice of examiners. Intellectual property of projects initiated by a company and undertaken in that company will remain with
the company. All other projects will be subject to the Intellectual Property policy of the relevant university partner.

**Credit Points:** 24

**Learning Outcomes:** To be advised.

**Class Contact:** Eight hours per week for one semester.

**Required Reading:** Current available text - students to be advised. Appropriate IEEE/IEE Journal materials.

**Assessment:** Assessment will be based on project progress and demonstration, 20%; Final project demo 30%; final report, 40% and an oral poster presentation, 10%.

**VEH6030 MAJOR PROJECT**

**Locations:** To be advised., Chipskills Partner Universities

**Pre-requisites:** EEH6001, EEH6002 and EEH6003

**Descriptions:** It is expected that the majority of industry-based students will undertake projects as part of their normal employment, where relevant opportunities exist and suitable resources and supervision can be guaranteed. Collaboration with international partners will also be encouraged. A project can be structured to be the equivalent of four units of study. Projects would be expected to demonstrate mastery in chip design and implementation at a level considered no less than that of an experienced practitioner in the field. Students must demonstrate their ability to integrate and draw upon their coursework studies relevant to the project. A dissertation of no less than 15000 words must be submitted and will be examined by two examiners selected by the examining panel for this module. Commercial confidentiality programs can be undertaken, with appropriate restrictions on publication and choice of examiners. Intellectual property of projects initiated by a company and undertaken in that company will remain with the company. All other projects will be subject to the Intellectual Property policy of the relevant university partner.

**Credit Points:** 48

**Learning Outcomes:** To be advised.

**Class Contact:** Sixteen hours per week for one semester. Assessment Assessment will be based on project progress and demonstration, 20%; Final project demo 30%; final report, 40% and an oral poster presentation, 10%.

**Required Reading:** Current available text - students to be advised. Appropriate IEEE/IEE Journal materials.

**Assessment:** To be advised.

**VEH6101 ASIC DESIGN TECHNIQUES**

**Locations:** Footscray Park,

**Pre-requisites:** Nil


**Credit Points:** 12

**Learning Outcomes:** To be advised.

**Class Contact:** Four hours per week for one semester comprising one hour per week of lecture and three hours per week of tutorial/laboratory.

**Required Reading:** Selected papers from IEEE/IEE Journal. To be advised by the lecturer.

**Assessment:** Assignments 20%; Research Project 80%.

**VEH6102 CUSTOM IC DESIGN B**

**Locations:** Footscray Park,

**Pre-requisites:** VEH6121 Basic IC Design or equivalent

**Descriptions:** The students will use modern integrated CAD software to accomplish schematic capture, simulation, layout, extraction, place and route and design verification. Mixed analog/digital system specification. Design and simulate circuit using schematic capture tools and HSPICE. Use of Mentor Graphics. Full-custom design tools to generate circuit layout, design rule checking, design verification and simulation. Input/output pads. Layout generators. Layout analysis. Placement and routing. Testing.

**Credit Points:** 12

**Learning Outcomes:** To be advised.

**Class Contact:** Four hours per week for one semester comprising one hour per week of lecture and three hours per week of project

**Required Reading:** Selected papers from IEEE/IEE Journal. To be advised by the lecturer.

**Assessment:** Assignments, 20%; Project, 80%.

**VEH6111 DIGITAL CIRCUIT DESIGN**

**Locations:** Footscray Park,

**Pre-requisites:** Completed Digital Design at undergraduate level or equivalent.


**Credit Points:** 12

**Learning Outcomes:** To be advised.

**Class Contact:** Four hours per week for one semester comprising two hours per week of lecture and two hours per week of tutorial/laboratory.


**Assessment:** Assignments and laboratory exercises 30%, Project 40%; final examination 30%.

**VEH6121 BASIC IC DESIGN/DEVICES**

**Locations:** Footscray Park,

**Pre-requisites:** Completed Digital Design at undergraduate level or equivalent.

**Descriptions:** Bipolar and CMOS structures. Logic design: Introduction to CMOS circuit design: Switch level analysis of NMOS and CMOS structures., CMOS logic gates using static and dynamic logic, Precharging techniques, latch up, pass transistor/transmission gate logic. PLA logic: static and dynamic design. Memory. Design of subsystems using sequential logic.

**Credit Points:** 12

**Learning Outcomes:** To be advised.

**Class Contact:** Four hours per week for one semester comprising two hours per week of lecture and two hours per week of tutorial/laboratory.

**Required Reading:** Weste, N. and Eschroegian, K., 1993, Principles of CMOS VLSI Design, Addison Wesley.

**Assessment:** Test, assignments and laboratory exercises 40%, final examination 60%.
VEH6122 CUSTOM IC DESIGN A

Locations: Footscray Park,

Pre-requisites: VEH6121 Basic IC Design/Devices or equivalent


Credit Points: 12

Learning Outcomes: To be advised.

Class Contact: Four hours per week for one semester comprising one hour per week of lecture and two hours per week of tutorial/laboratory.

Required Reading: To be advised.

Assessment: Assignments, 40%; project, 60%.

VEH6132 INTEGRATED CIRCUIT TESTABILITY

Locations: Footscray Park,

Pre-requisites: VEH6001 - HDL AND HIGH LEVEL SYNTHESIS equivalent.


Credit Points: 12

Learning Outcomes: To be advised.

Class Contact: Four hours per week for one semester comprising two hours per week of lecture and two hours per week of tutorial/laboratory.


Assessment: Assignments and laboratory exercises 60%, final examination 40%.

VEH6142 EMERGING TECHNOLOGIES

Locations: Footscray Park,

Pre-requisites: Nil


Credit Points: 12

Learning Outcomes: To be advised.

Class Contact: Four hours per week for one semester comprising one hour per week of lecture and three hours per week of research project.

Required Reading: Selected papers from IEEE/IEE Journals. To be advised by the lecturer.

Assessment: Assignments, 40%; final project, 60%.

VEH6151 VHDL AND HIGH LEVEL SYNTHESIS

Locations: Footscray Park,

Pre-requisites: Nil.


Credit Points: 12

Learning Outcomes: To be advised.

Class Contact: Four hours per week for one semester comprising two hours per week of lecture and two hour per week of tutorial/laboratory.


Assessment: Assignment & laboratory exercises 20%, project 50%; final examination, 30%.

VEH6152 MICROPROCESSOR DESIGN TECHNIQUES

Locations: Footscray Park,

Pre-requisites: VEH6111 Digital Circuit Design


Credit Points: 12

Learning Outcomes: To be advised.

Class Contact: Four hours per week for one semester comprising two hours per week of lecture and two hours per week of tutorial/lab.

Required Reading: Selected papers from IEEE/IEE Journals. To be advised by the lecturer.

Assessment: Test, assignments and laboratory exercises 40%, final examination 60%.

VEM2012 ELECTRICAL ENGINEERING

Locations: Footscray Park,

Pre-requisites: REP1002 - ENGINEERING PHYSICS 1B


Credit Points: 12

Learning Outcomes: On successful completion of this unit students are expected to be able to:
On successful completion of this unit, students are expected to be able to:

3. Design and test combinational and sequential digital circuits including binary counters.

Class Contact: 60 hours of lectures, tutorials and laboratory work.


Assessment: Laboratory Work Laboratory Report 1 5%

VEF3001 CUSTOM IC DESIGN & EDA TOOLS

Locations: To be advised., Footscray

Pre-requisites: VEF2004 Systems and Applications 2D

Descriptions: The design of basic CMOS integrated circuits is covered, including overview of MOS technology, complex complementary CMOS design, combinational design techniques including dynamic and domino logic, CMOS Latchup and circuit protection. Students will develop hands-on experience in design, simulation, verification and implementation using industry standard EDA tools for custom design. This has required the syllabus to be presented as a collection of lectures, the emphasis and sequence of which may be varied to accommodate the demands of any concurrent Engineering Design exercises. In addition to delivery by lecture and tutorial the unit will incorporate laboratory exercises and demonstrations of the concepts and techniques presented.

Credit Points: 6

Learning Outcomes: The Learning outcomes of this unit of study will depend upon the lectures presented, as required to support concurrent Engineering Design exercises.

On successful completion of this unit, students are expected to be able to:

• Gained knowledge of basic custom integrated circuits design
• Gained knowledge of custom integrated circuit design flow and circuit design
• Carried out significant tasks designed to improve desired generic skills and attributes.
• Gained knowledge of industry standard electronic design automation tools.
• Gained knowledge of electronic design automation tools for custom IC designs.

Class Contact: 2.5 hours per week consisting of lectures/tutorials and laboratory exercises.


Assessment: Students will be assessed in this unit of study on the basis of an end of semester examination 50%, a project 35% and satisfactory performance of laboratory based components of this unit 15%

VEF4001 ADVANCED CUSTOM IC DESIGN

Locations: Footscray Park,

Pre-requisites: Nil.

Descriptions: Overview of MOS and sub-micron technology, scaling and signal integrity, IC design techniques. CMOS cell design: device-level design constraints, gate design, pass transistor circuits, sequential circuits, mask level design. Layout considerations, design rules and mask level design. Circuit optimisation techniques. Timing issues in VLSI circuit design. Design of VLSI system sub-systems: Arithmetic and logic processing elements, adders, counters, l/0s, buffers, data path design and layout, etc. Chip floor planning. Design tradeoffs-cost, power and performance. The syllabus will be presented as a collection of lectures, the emphasis and sequence of which may be varied to accommodate the demands of any concurrent Engineering Design exercises. In addition to delivery by lecture and tutorial the unit of study will incorporate laboratory exercises and demonstrations of the concepts and techniques presented.

Credit Points: 6

Learning Outcomes: The Learning outcomes of this unit of study will depend upon the lectures presented, as required to support concurrent Engineering Design exercises.

On successful completion of this unit, students are expected to be able to:

• Gained knowledge of basic integrated circuits design.
• Gained knowledge of integrated circuit design flow and circuit design.
• Carried out significant tasks designed to improve desired generic skills and attributes.

Class Contact: 2.5 hours per week consisting of lectures/tutorials and laboratory exercises.


Assessment: Students will be assessed in this unit of study on the basis of an end of semester examination 50%, a project 35% and satisfactory performance of laboratory based components of this unit 15%.
VEM4002 HETEROGENEOUS SYSTEMS

Locations: Footscray Park,
Pre-requisites: VEM3002 - APPLICATION SPECIFIC IC DESIGN

Descriptions: Overview of current trends in semiconductor technology, fundamental physical and economic constraints, technology roadmap for semiconductors, challenges and needs for nanoelectronics, organic and molecular microelectronics, system implementation issues, development of mixed signal and RF systems, MEMS, wireless sensor networks, ambient technology. The syllabus will be presented as a collection of lectures, the emphasis and sequence of which may be varied to accommodate the demands of any concurrent Engineering Design exercises. In addition to delivery by lecture and tutorial the unit of study will incorporate laboratory exercises and demonstrations of the concepts and techniques presented.

Credit Points: 6

Learning Outcomes: The Learning outcomes of this unit of study will depend upon the lectures presented, as required to support concurrent Engineering Design exercises.

On successful completion of this unit, students are expected to be able to:

- Gained knowledge of current trends in semiconductor technology.
- Gained knowledge of simulation and design of heterogeneous systems.
- Carried out significant tasks designed to improve desired generic skills and attributes.

Class Contact: 2.5 hours per week consisting of lectures/tutorials and laboratory exercises.


Assessment: Students will be assessed in this unit of study on the basis of an end of semester examination 50%, a project 35% and satisfactory performance of laboratory based components of this unit 15%.

VEM4012 DESIGN FOR TESTABILITY

Locations: Footscray Park,
Pre-requisites: VEH3001 - DIGITAL SYSTEM DESIGN A

Descriptions: Techniques to improve the testability of microelectronics circuits and systems are covered. Design for test concepts, ad-hoc and structured, which improve the circuit to allow efficient testing after manufacturing are fully analysed. This includes device reliability, memory reliability, test issues, controllability and observability, built in self test, scan chain synthesis, boundary scan, automatic test pattern generation, and system on chip test issues. Students will develop hands-on experience in design for test using industry standard EDA tools. The unit of study is designed to provide support for students requiring knowledge of electronic circuits design in a concurrently studied Engineering Design unit. The specific aims of this unit of study are to help students develop competence in and comprehension of the principles of reliability and design for test of microelectronics circuits and systems, learn the fundamentals of various ad-hoc and structures design for test techniques for digital microelectronic circuits and to develop practical skills with industry standard tools, methods and techniques through practical application. The unit will be presented as a collection of lectures, the emphasis and sequence of which may be varied to accommodate the demands of any concurrent Engineering Design exercises. In addition to delivery by lecture and tutorial the unit of study will incorporate laboratory exercises and demonstrations of the concepts and techniques presented.

Credit Points: 6

Learning Outcomes: The Learning outcomes of this unit of study will depend upon the lectures presented, as required to support concurrent Engineering Design exercises.

On successful completion of this unit, students are expected to be able to:

- Gained an understanding of circuit testability issues and design for testability.
- Gained knowledge in fault modelling and testing methodologies.
- Gained an appreciation for system level testing.
- Developed skills in the use of EDA design for test tools.

Class Contact: 2.5 hours per week consisting of lectures/tutorials and laboratory exercises.


Assessment: Students will be assessed in this unit of study on the basis of an end of semester examination 60%, satisfactory performance of laboratory based exercises and project work 40%.

VEM4100 ANALOG AND MIXED SIGNAL DESIGN

Locations: Footscray Park,
Pre-requisites: VEF2004 - SYSTEMS & APPLICATIONS 2D

Descriptions: The design of CMOS analog and mixed-signal integrated circuits is covered. Design concepts of high speed low power amplifiers, filters, sample and hold circuits, comparators, digital to analog and analog to digital converters are fully analysed. Students will develop hands-on experience in design, simulation, verification and implementation using industry standard EDA tools.

Credit Points: 6

Learning Outcomes: On successful completion of this unit, it is expected that students will be able to:

- have good understanding of most common integrated circuit design, and D/A and D/A converters.
- Hands-on experience using industry standard Software design tools.

Class Contact: 2.5 hours per week consisting of lectures/tutorials and laboratory exercises.


Assessment: Laboratory exercises: 20%; Project: 20%; Final Examination: 60%.

VEP3000 PHOTONICS A

Locations: Footscray Park,
Pre-requisites: Completion of 2nd year of appropriate degree.


Credit Points: 12

Learning Outcomes: To be advised.

Class Contact: 60 hours per semester comprising 48 hours of lectures/tutorial and 12 hours of laboratory.


Assessment: Assignments conducted throughout the semester 20%; Laboratory performance 20%; End of semester examination 60%.
VEP3001 PHOTONICS

Locations: Footscray Park,

Pre-requisites: VEF1002 - ENABLING SCIENCES 1B

Descriptions: This unit provides an introduction to photonics and optoelectronics, and also support for students requiring knowledge of the creation, transmission and detection of light (photons) in a concurrently studied PBL unit. In this unit students will be presented with a description of the nature of light, the generation of light (light sources and their properties such as lasers, light emitting diodes), the transmission of light (optical fibres and waveguides, optical amplifiers), the detection. The primary delivery means of the syllabus will be by lecture, supported by laboratory demonstrations.

Credit Points: 6

Learning Outcomes: The Learning outcomes of this unit of study will depend upon the lectures presented, as required to support concurrent PBL exercises.

On successful completion of this unit, students are expected to be able to:

• To have a basic understanding of the properties of light and behaviour as light particles (photons).
• To understand the properties of lasers and optical amplification
• To understand the properties of semiconductor photonics.
• To understand properties of optical fibres and waveguides and how they transmit light.
• To understand how optical fibre systems are designed.

Class Contact: 30 hours of class contact per semester. 2 hours of lecture/tutorial and 0.5 hours of laboratory exercises per week.


Assessment: End of semester examination 65%, two assignments 15% and requires satisfactory performance of laboratory based components of this subject 20

VEP3002 PHOTONICS 2

Locations: Footscray Park,

Pre-requisites: VEF1001 - ENABLING SCIENCES 1A

Descriptions: In this unit students will be presented with a wave description of light starting with Maxwell’s equations Maxwell’s equations for waveguides, boundary conditions and eigenvalue equations, planar dielectric waveguides and their modes, step index optical fibres, graded index optical fibres. Optical fibre sensors: Introduction and basic concepts, materials interactions in optical fibre sensors, polarisation, Jones’ vectors and matrices, interferometers, fibre Bragg gratings. The syllabus will be presented as a collection of lectures, the emphasis and sequence of which may be varied to accommodate the demands of any concurrent PBL exercises. In addition to delivery by lecture, the unit will incorporate laboratory exercises and demonstrations of the concepts and techniques presented.

Credit Points: 6

Learning Outcomes: The Learning outcomes of this unit of study will depend upon the lectures presented, as required to support concurrent PBL exercises.

Upon successful completion of this unit of study, the students are expected:

• To understand the wave nature of light and its interactions with optical materials.
• To understand the waveguiding properties of slab waveguides and optical fibres.
• To understand how photonics is used in sensing.

Class Contact: 30 hours of class contact per semester. 2 hours of Lecture/Tutorial and 0.5 hours of laboratory exercises per week


Assessment: Students will be assessed in this unit of study on the basis of an end of semester examination (65%), two assignments (15%) and satisfactory performance of laboratory based exercises (20%). Evaluation of CMA in units: Level 1 (1%) Level 2 (1%) Level 3 (3%) Problem Solving 10 20 20 Using Information 10 20 20 Communication Oral 0 0 0 Communication Written 0 0 0 Professional - Autonomous 0 0 0 Professional - Collaborative 0 0 0 Social & Cultural Diversity 0 0 0

VEP4000 PHOTONICS B

Locations: Footscray Park,

Pre-requisites: VEP3001 - PHOTONICS


Credit Points: 12

Learning Outcomes: To be advised.

Class Contact: 60 hours per semester comprising 48 hours of lectures/tutorial and 12 hours of laboratory.


Assessment: Assignments conducted throughout the semester 20%; Laboratory performance 20%; End of semester examination 60%.

VER3101 MECHATRONICS

Locations: Footscray Park,

Pre-requisites: VEF2001 - LINEAR SYSTEMS AND MATHEMATICS 2A

Descriptions: This unit of study is designed to give engineering students an introduction to mechatronics. The specific aims of the unit are: to develop an analytical and practical understanding of Programmable Logic Controllers (PLCs), industrial robots, machine vision, sensors and image processing. To develop communication skills that will enable students to adequately describe project and laboratory tasks and or specifications to both related professionals and non technical personnel. To develop the ability to work as a team member in a small group to solve laboratory problem exercises. This unit will cover: Basic architecture of Programmable Logic Controllers (PLCs), PLC programming, PLC networking and applications. Robats & control methods Introduction to Supervisory Control And Data Acquisition (SCADA): Sensors and vision system design and instrumentation. Manufacturing process analysis and workspace design. Introduction to coordinate systems. Industrial robots and machine vision. The unit will focus on providing experience in analysing, programming and utilizing the above mentioned equipment in applications relating to the automation of industrial plant.
FACULTY OF HEALTH, ENGINEERING AND SCIENCE

Credit Points: 6
Learning Outcomes: On successful completion of this unit of study students are expected to:

- Analyse industrial automation problems.
- Design mechatronic solutions.
- Program PLC to solve given problems, utilising sensors & actuators.
- Perform image processing tasks such as edge detection and blob recognition.

Class Contact: 30 Hours of contact comprising 15hrs of lectures/tutorials and 15hrs of Laboratory.
Assessment: Written Examination (50%): Students are required to successfully complete a 3 hour written examination. Tests (10%): Students are required to successfully complete two 2 hour tests to be held during the semester teaching period. Main Core Graduate Attributes and Levels (% in brackets) for Written Examination & Tests: W1(5); P2(7); I2(7); P3(5),I3(5),A3(4). Laboratory Assignments (40%): Students are required to successfully complete five laboratory assignments (each 8% weighting). Main Core Graduate Attributes and Levels (% in brackets) for Laboratory Assignments: P2(8), I2(8),P2(5),W2(5),A2(5),C2(10); P3(5),I3(5),O3(5),A3(6),C3(5).

VES2102 OPERATING SYSTEMS AND TOOLS
Locations: Footscray Park,
Pre-requisites: VEF1004 - ELECTRICAL FUNDAMENTALS 1B
Credit Points: 6
Learning Outcomes: On successful completion of this unit, students are expected to be able to:

- write shell scripts to automate routine system management task;
- use PERL to perform more complex system routines;
- describe clearly the components and functions of a modern day OS;
- perform routine operating system management task.
Class Contact: 30 hours of contact comprising 20 hours of lectures/tutorials and 10 hours of laboratory sessions.
Required Reading: Ng, Y. (Ed.) (2008). Class notes (Rev. ed.). Footscray, Australia: Victoria University, School of Electrical Engineering.
Assessment: Laboratory Assignments (30%); Tests (10%); Examination (60%).

VES3102 INTRODUCTION TO COMPUTER NETWORKS B
Locations: Footscray Park,
Pre-requisites: VEF2002 - SYSTEMS AND MATHEMATICS 2B
Descriptions: This unit of study is designed to provide students with a good understanding of computer networking protocols and the management of computer networks. The unit will also provide support for Engineering Design unit that has a computer network focus. This unit has required the syllabus to be presented as a collection of lectures, the emphasis and sequence of which may be varied to accommodate the demands of any concurrent Engineering Design exercises. This unit will cover: Network Models: OSI, TCP/IP; Network Layer - IP addressing, subnetting, netmask, IP protocols, ARP, ICMP, IP routing; Transport Layer - TCP, UDP protocols, flow control, error control, BSD sockets; Application Layer: DNS, HTTP. In addition to delivery by lecture and tutorial the unit will incorporate laboratory exercises and demonstrations of the concepts and techniques presented.
Credit Points: 6
Learning Outcomes: The Learning outcomes of this unit of study will depend upon the lectures presented, as required to support concurrent Engineering Design exercises.
On successful completion of this unit, students will be able:

- To have a good understanding of principle and practice of computer networking protocols.
- To design and manage a computer network.
Class Contact: 30 hours of class contact. 2 hours of Lecture/Tutorial and 0.5 hours of Laboratory exercises per week.
Assessment: Written Examination 40%, Class Tests 20%, Laboratory Assignments 40% (Five laboratory assignments, each 8% weighting).
VES3104 NETWORK SOFTWARE AND INTERNET PROGRAMMING

Locations: Footscray Park,

Pre-requisites: VES2102 - OPERATING SYSTEMS AND TOOLS


Credit Points: 6

Learning Outcomes: On successful completion of this unit, students are expected to be able to:

- describe the operations and functionalities of webserver, webproxy, firewall and remote access server;
- install, configure and manage these network servers;
- implement interactive web pages using Javascript.

Class Contact: 30 hours of contact comprising 15 hours of lectures/tutorials and 15 hours of laboratory sessions.


Assessment: Laboratory Assignments (30%); Tests (10%); Examination (60%).

VES4102 COMPUTER SYSTEMS B

Locations: Footscray Park,

Pre-requisites: VEF2003 - SYSTEMS AND APPLICATIONS 2C

Descriptions: This unit of study is designed to provide students with a good understanding of graphical user interfaces design and implementation in application programming. The unit will also provide support for Engineering Design unit that has a programming user interface need. This unit will cover: Introduction to graphical user interfaces (GUI). Application of object oriented techniques to the production of windows-based programs. Window interface design, placement, and implementation. Development of class libraries. Platform independent window toolkit. The syllabus will be presented as a collection of lectures, the emphasis and sequence of which may be varied to accommodate the demands of any concurrent Engineering Design exercises.

Credit Points: 6

Learning Outcomes: The Learning outcomes of this unit of study will depend upon the lectures presented, as required to support concurrent Engineering Design exercises.

On successful completion of this unit, students are expected to be able to:

- have a good understanding of principle and application of object oriented paradigm to user interface design.
- be able use window GUI class libraries to implement user interfaces in application programs.

Class Contact: 30 hours of class contact. 2 hours of Lecture/Tutorial and 0.5 hours of laboratory exercises per week.


Assessment: End of semester examination 40% Class Tests 20% Laboratory Assignments (Five laboratory assignments, each 8% weighting):40

VES4102 SOFTWARE ENGINEERING

Locations: Footscray Park,

Pre-requisites: VEF2003 - SYSTEMS AND APPLICATIONS 2C

Descriptions: The unit’s aim is to introduce students to the principle, technique and practice of the current software engineering process. The unit will also provide support for Engineering Design unit that has software engineering focus. This subject will cover: Introduction to the engineering of quality software. The software development lifecycle model. System analysis, software requirements definition, specification, elicitation, analysis and modelling. Process specifications and data dictionary production. Software design process, principles and production. The testing process, planning and strategies. CASE tools and software engineering environments. Software project planning and estimating. The syllabus will be presented as a collection of lectures, the emphasis and sequence of which may be varied to accommodate the demands of any concurrent Engineering Design exercises.

Credit Points: 6

Learning Outcomes: The Learning outcomes of this unit of study will depend upon the lectures presented, as required to support concurrent Engineering Design exercises.

On successful completion of this unit, students are expected to be able to:

- have a basic understanding of the structure and operations of a modern computer system.
- be able to access operating system facilities and resources by using a high level language such as C.
- be able to develop multithreaded applications for a modern OS such as Unix.
- have a basic understanding of principle of GRID computing environment.

Class Contact: 30 hours of class contact. 2 hours of Lecture/Tutorial and 0.5 hours of Laboratory exercises per week.


Assessment: Written Examination 40%, Class Tests 20%, Laboratory Assignments (Five laboratory assignments, each 8% weighting) 40%.
VET3100 ANALOG AND DIGITAL COMMUNICATIONS

Locations: Footscray Park,

Pre-requisites: VEF2002 - SYSTEMS AND MATHEMATICS 2B

Descriptions: This unit of study provides an introduction to Telecommunication Engineering. The unit is designed to provide the theoretical basis for the understanding of the engineering aspects of the design, construction, and operation of the existing and emerging Telecommunication systems. It also provides the support for students requiring basic knowledge of Telecommunication Engineering in order to handle concurrently studied Engineering Design projects that involve various aspects of Telecommunication Engineering. This has required the syllabus to be presented as a collection of lectures, the emphasis and sequence of which may be varied to accommodate the demands of any concurrent PBL exercises. In addition to delivery by lecture and tutorial the unit will incorporate laboratory exercises and demonstrations of the concepts and techniques presented.

Credit Points: 6

Learning Outcomes: On successful completion of this unit, students are expected to be able to:

• Explain signals and their characteristics as depicted in time and frequency domains;
• Discuss the information bearing nature of signals and the bandwidth considerations;
• Explain the principles behind frequency translation and its depiction as various types of modulation;
• Explain the signal transition in linear and non-linear systems, and the recognition of such systems in terms of filters and other components;
• Describe the types of noise present in telecommunication systems and the characterization of thermal noise;
• Perform the statistical analysis of random signals and the characterization of such signals in terms of correlation and power spectral density functions;
• Explain the concept of signal to noise ratio and its influence in faithful reception of analog and digital signals;
• Outline the assessment of performance in digital communication systems in terms of bit error probability;
• Explain the basis of line coding and application of line coding in baseband digital communication systems;
• Discuss the baseband recovery of bandpass communication systems and the impact of the type of modulation in such systems.

The Learning Outcomes of this unit of study will also depend upon the material presented, as required to support the concurrent Engineering Design exercises.

Class Contact: 30 hours of class contact for one semester comprising 2 hours of lecture/tutorials and 0.5 hours of laboratory work per week.


Assessment: Continuous assessment in laboratory work (6 hours per semester) (20%); mid-semester written test (20%); end-of-semester examination (60%).

VET3200 DIGITAL MODULATION AND CODING

Locations: Footscray Park,

Pre-requisites: VET3100 - ANALOG AND DIGITAL COMMUNICATIONS

Descriptions: This unit of study provides continuation of the Communication Systems Engineering stream covering the remaining areas of the main stream Telecommunication Engineering. The unit is designed to provide the theoretical basis for the understanding of the engineering aspects of the design, construction, and operation of the existing and emerging Telecommunication systems. It also provides the support for students requiring basic knowledge of Telecommunication Engineering in order to handle concurrently studied Engineering Design projects that involve various aspects of Telecommunication Engineering. This has required the syllabus to be presented as a collection of lectures, the emphasis and sequence of which may be varied to accommodate the demands of any concurrent PBL exercises. In addition to delivery by lecture and tutorial the unit will incorporate laboratory exercises and demonstrations of the concepts and techniques presented.

Credit Points: 6

Learning Outcomes: On successful completion of this unit, students are expected to be able to:

• Explain the principles of digital communication systems and components;
• Describe the optimum signal detection using matched filter receiver in additive white Gaussian noise;
• Explain the baseband transmission techniques;
• Discuss the effects of bandwidth limitation, intersymbol interference, Nyquist signalling and channel equalization;
• Describe the bandpass transmission techniques;
• Describe the BPSK, QPSK, and QAM modulation systems and coherent detection of those systems;
• Explain the carrier and clock synchronization techniques;
• Explain the channel coding including linear block codes, convolutional codes, Viterbi decoding;
• Explain information theory, source coding, and data compression;
• Explain coded modulation systems, trellis coding, and decoding;

The Learning Outcomes of this unit of study will also depend upon the material presented, as required to support the concurrent Engineering Design exercises.

Class Contact: 30 hours of class contact for one semester comprising 2 hours of lecture/tutorials and 0.5 hours of laboratory work per week.


Assessment: Continuous assessment in laboratory work (6 hours per semester) (20%); mid-semester written test (20%); end-of-semester examination (60%).

VET4101 FIELD AND WAVES IN TELECOMMUNICATIONS

Locations: Footscray Park,

Pre-requisites: VEF2002 - SYSTEMS AND MATHEMATICS 2B

Descriptions: This unit of study provides an introduction to Field and Wave in Telecommunication Engineering. The unit is designed to provide the theoretical basis for the understanding of the engineering aspects of the design, construction, and operation of the existing and emerging Telecommunication systems. It also provides the support for students requiring basic knowledge of Telecommunication Engineering in order to handle concurrently studied Engineering Design projects that involve various aspects of Telecommunication Engineering. This has required the syllabus to be presented as a collection of lectures, the emphasis and sequence of which may be varied to accommodate the demands of any concurrent PBL exercises. In addition to delivery by lecture and tutorial the unit will incorporate laboratory exercises and demonstrations of the concepts and techniques presented.

Credit Points: 6
Learning Outcomes: On successful completion of this unit, students are expected to be able to:

• Describe the space and material media that are capable of carrying signals used in Telecommunication systems;
• Describe the physical composition of such media, their characteristics and modes of operation;
• Discuss the limitations of such media with regard to frequency, bandwidth, and power;
• Explain the phenomena of propagation of electromagnetic waves in space and material media including coaxial cables and waveguides;
• Discuss the theoretical basis for electromagnetic wave propagation including the derivation and application of Maxwell’s equations;
• Explain the Smith chart and its application in the design of high frequency circuits and systems;
• Explain free space propagation and practical propagation models.

The Learning Outcomes of this unit of study will also depend upon the material presented, as required to support the concurrent Engineering Design exercises.

Class Contact: 30 hours of class contact for one semester comprising 2 hours of lecture/tutorials and 0.5 hours of laboratory work per week.


Assessment: Continuous assessment in laboratory work (6 hours per semester) (20%); mid-semester written test (20%); end-of-semester examination (60%).

VET4202 DATA COMMUNICATIONS

Locations: Footscray Park,

Pre-requisites: VET3100 - ANALOG AND DIGITAL COMMUNICATIONS

Descriptions: This unit of study provides continuation of the Communication Systems Engineering stream covering the remaining areas of the main stream Telecommunication Engineering. The unit is designed to provide the theoretical basis for the understanding of the engineering aspects of the design, construction, and operation of the existing and emerging Telecommunication systems. It also provides the support for students requiring basic knowledge of Telecommunication Engineering in order to handle concurrently studied Engineering Design projects that involve various aspects of Telecommunication Engineering. This has required the syllabus to be presented as a collection of lectures, the emphasis and sequence of which may be varied to accommodate the demands of any concurrent Engineering Design exercises. In addition to delivery by lecture and tutorial the unit will incorporate laboratory exercises and demonstrations of the concepts and techniques presented.

Credit Points: 6

Learning Outcomes: On successful completion of this unit, students are expected to be able to:

• Discuss the basic principles involved in data communication systems;
• Explain the data network architecture, operation, and performance analysis evaluation of the protocols employed in data networks;
• Explain the particular aspects of local area and wide area networks;
• Discuss wireless networks, their operation, and interfacing with network backbone;
• Explain the analytical techniques employed in data network performance estimation;
• Explain the basic queuing theory and its application to data networks;
• Describe data network switching and switching systems;
• 9. Discuss the principles involved in data network design and the heuristic algorithms employed;
• 10. Explain cost effective designs of local and wide area networks.

The Learning Outcomes of this unit of study will also depend upon the material presented, as required to support the concurrent PBL exercises.

Class Contact: 30 hours of class contact for one semester comprising 2 hours of lecture/tutorials and 0.5 hours of laboratory work per week.


Assessment: Continuous assessment in laboratory work (6 hours per semester) (20%); mid-semester written test (20%); end-of-semester examination (60%).

VET4300 DIGITAL COMMUNICATIONS

Locations: Footscray Park,

Pre-requisites: VET4001 Telecommunication Engineering C, VET3200 Digital Modulations and Coding.


Credit Points: 6

Learning Outcomes: On successful completion of this unit, it is expected that students will be able to:

• design common digital modulators and receivers;
• perform analysis of digital communication systems in AWGN channels;
• design simple equalizers and synchronizers.

Class Contact: 36 hours per semester comprising 24 hours of lecture/tutorial and 12 hours of laboratory work.


Assessment: Assignments and class tests 30%; End of semester examination 70%.

VET4400 DIGITAL SIGNAL PROCESSING IN TELECOMMUNICATIONS 2

Locations: Footscray Park,

Pre-requisites: VEG4100 Digital Signal Processing A


Credit Points: 6

Learning Outcomes: On successful completion of this unit, it is expected that students will be able to:

• apply multi-rate signal processing,
• apply fast convolution,
• apply parameter estimation algorithms in the form of subsystems in telecommunication.
Class Contact: 36 hours per semester comprising 24 hours of lecture/tutorial and 12 hours of laboratory work.


Assessment: Assignments and class test 30%; End of semester examination 70%.

VET4600 WIRELESS COMMUNICATIONS

Locations: Footscray Park,
Pre-requisites: VET3001 Telecommunication Engineering A or VET4101 Field and Waves in Telecommunications, VET4001 Telecommunication Engineering B or VET3200 Digital Modulation and Coding.


Credit Points: 6
Learning Outcomes: On successful completion of this unit, it is expected that students will be able to:
• perform performance analysis of wireless communication systems with appropriate fading models,
• apply diversity techniques to overcome system impairment due to multi-path fading,
• understand the advantages and disadvantages of modern techniques like WCDMA and OFDM.

Class Contact: 36 hours per semester comprising 24 hours of lecture/tutorial and 12 hours of laboratory works.


Assessment: Assignments and class tests 30%; End of semester examination 70%.

VET6500 RESEARCH PROJECT

Locations: Footscray Park,
Pre-requisites: VET6510, VET6520

Descriptions: Each student will undertake an individual research under the guidance of an academic staff on a suitable topic, over the duration of a semester. Lectures, seminars, and regular meetings will be held collectively to expose students to research related matters such as Research Methodology, Literature Reviews, Feasibility Studies, Experiment Design, Modelling and Simulation Techniques and Tools, Results Validation and Decision Making, Report Writing, Structured Documentation, and Scientific Presentation.

Credit Points: 48
Learning Outcomes: To be advised.

Class Contact: Twelve hours per week for one semester, comprising three hours per week group seminar, three hours per week (on average) individual meetings, discussions, etc. with the respective supervisor, and six hours per week independent study including laboratory and library activity.

Required Reading: To be advised by the supervisor of the project.

Assessment: Regular seminar presentations (3 seminars, each of 20 min. duration) 30%; Final report (Approximately 25,000 words) 50%; Final presentation (of duration 40 min.) 20%; Final report is to be examined by an external examiner (who could also be present at the final presentation).

VET6501 COMMUNICATION SYSTEM MODELING AND SIMULATION 1

Locations: Footscray Park,
Pre-requisites: Nil


Credit Points: 12
Learning Outcomes: To be advised.

Class Contact: Three hours per week for one semester.

Required Reading: To be advised by lecturer.

Assessment: Preliminary assignments, 40%; final assignment, 60%.

VET6502 COMMUNICATION SYSTEM MODELING AND SIMULATION 2

Locations: Footscray Park,
Pre-requisites: Nil

Descriptions: Introduction to OPNET and other industry standard simulation tools and their application in telecommunication systems modelling and simulation.

Credit Points: 12
Learning Outcomes: To be advised.

Class Contact: Three hours per week for one semester.

Required Reading: To be advised by lecturer.

Assessment: Preliminary assignments, 40%; final assignment, 60%.

VET6510 COMMUNICATION THEORY

Locations: Footscray Park,
Pre-requisites: Nil


Credit Points: 12
Learning Outcomes: To be advised.

Class Contact: Three hours per week, comprising lectures, tutorials and seminars.


Assessment: Class test (Two Hours) 20%; Assignment (report not exceeding 5000 words) 20%; Final examination (Three Hours) 60%.
VET6511 DATA NETWORK ANALYSIS AND DESIGN

Locations: Footscray Park,
Pre-requisites: Nil


Credit Points: 12
Learning Outcomes: To be advised.

Class Contact: Three hours per week for one semester comprising two hour lecture and one hour tutorial/laboratory.


Assessment: Tests/Assignments: 40%; Examination: 60%. A pass in each component of assessment is required for a subject pass.

VET6520 DIGITAL COMMUNICATION PRINCIPLES

Locations: Footscray Park,
Pre-requisites: Nil


Credit Points: 12
Learning Outcomes: To be advised.

Class Contact: Three hours per week, comprising lectures, tutorials and seminars.


Assessment: Class test (Two Hours) 20%; Assignment (report not exceeding 5000 words) 20%; Final examination (Three Hours) 60%.

VET6531 WIRELESS COMMUNICATION SUBSYSTEMS

Locations: Footscray Park,
Pre-requisites: Nil

Descriptions: This subject will provide a theoretical and practical understanding of wireless communication systems and the subsystems involved in them. It provides an overview of existing wireless systems with special reference to its hardware implementation. Subject content will include the following: Propagation modelling at UHF. Path loss, slow fading and fast fading. Okumura’s model. Delay spread, coherence bandwidth, and level crossing rate. Multipath propagation. Interference cancellation. Antennas. Antenna gain, radiation resistance, and phased array antennas. Base station antennas for cellular mobile systems. Low profile portable antennas. Modulation and coding for the mobile channel. FM, CPW, GMSK, and QPSK. Bit error rate and error flow. Channel equalisation. The effect of space, time and frequency diversity. Spread spectrum. CDMA, TDMA and FDMA.

Credit Points: 12
Learning Outcomes: To be advised.

Class Contact: Three hours per week for one semester comprising two hour lecture and one hour tutorial/laboratory.

Required Reading: To be advised by the lecturer.

Assessment: Tests/Assignments: 40%; Examination: 60%. A pass in each component of assessment is required for a subject pass.

VET6542 MOBILE AND PERSONAL COMMUNICATION SYSTEMS

Locations: Footscray Park,
Pre-requisites: Nil


Credit Points: 12
Learning Outcomes: To be advised.

Class Contact: Three hours per week for one semester comprising two hour lecture and one hour tutorial/laboratory.


Assessment: Tests/Assignments: 40%; Examination: 60%. A pass in each component of assessment is required for a subject pass.

VET6550 MINOR PROJECT

Locations: Footscray Park,
Pre-requisites: VET6510 - COMMUNICATION THEORY

Descriptions: Each student will undertake an individual research on a topic allocated to him or her under the supervision of an academic staff over the duration of a semester. Regular meetings will be held between the students and their supervisors in the form of seminars where students will report their progress in the form of formal presentations. In addition, informal meetings between students and their supervisors will take place as and when required. In the process, the student will be exposed to research related matters such as Research Methodology, Literature Reviews, Feasibility Studies, Experiment Design, Modelling and Simulation Techniques and Tools, Results Analysis and Validation, Report Documentation and Presentation.

Credit Points: 24
Learning Outcomes: To be advised.

Class Contact: Six hours per week for one semester, comprising three hours per week group seminar, and three hours per week (on average) individual meetings, discussions, etc. with respective supervisors.

Required Reading: To be advised by the supervisor of the project.

Assessment: Regular seminar presentations (3 seminars, each of 20 min duration), 30%. Final report (Approximately 12,000 words) 50%. Final presentation (of 30 min. duration), 20%
FACULTY OF HEALTH, ENGINEERING AND SCIENCE

VET6552 COMPUTER NETWORKS AND NETWORKING SOFTWARE

Locations: Footscray Park,

Pre-requisites: Nil


Credit Points: 12

Learning Outcomes: To be advised.

Class Contact: Three hours per week for one semester comprising two hour lecture and one hour tutorial/laboratory.


Assessment: Tests/Assignments: 40%; Examination: 60%. A pass in each component of assessment is required for a subject pass.

VET6562 DIGITAL SIGNAL PROCESSING

Locations: Footscray Park,

Pre-requisites: Nil


Credit Points: 12

Learning Outcomes: To be advised.

Class Contact: Three hours per week for one semester comprising two hour lecture and one hour tutorial/laboratory.

Required Reading: To be advised by lecturer.

Assessment: Tests/Assignments: 40%; Examination: 60%. A pass in each component of assessment is required for a subject pass.

VMC5771 COMPUTER AIDED ENGINEERING

Locations: Footscray Park,

Pre-requisites: Nil


Credit Points: 12

Learning Outcomes: To be advised.

Class Contact: Three hours weekly for 12 weeks, comprising of one lecture and two tutorials.


Assessment: Three assignments, 60% (each of 20% based on analytical and computational works and report of 5000-7500 words); three-hour final examination, 40% (open book). Students must attain a mark of at least 50% in each component to pass this subject.

VME5782 SPECIALIST ELECTIVE

Locations: Footscray Park,

Pre-requisites: VMW5771 Research Techniques.

Descriptions: One of the following topics, subject to staff availability: VMM5782 Composite materials design, VMF5882 Flow measurement techniques, VMSS5772 Optimization, VMM5782 Transportation and packaging dynamics.

Credit Points: 12

Learning Outcomes: To be advised.

Class Contact: Three hours weekly comprising of lectures, tutorials and laboratory for 12 weeks

Required Reading: As recommended by the lecturers.

Assessment: As specified by the Lecturer of the Specialist Elective chosen.

VMF5881 ADVANCED FLUID-THERMO DYNAMICS

Locations: Footscray Park,

Pre-requisites: Nil

transfers from conduction, convection and radiation, application in modelling the smoke spread in buildings and internal combustion. Combustion, combustion equations, premixed laminar flames, gaseous diffusion flames, turbulent flames.

Credit Points: 12

Learning Outcomes: On successful completion of this unit, students should be able to:

- Understand and be able to apply the various turbulence models to solve practical fluid related engineering problems.
- Understand and be able to calculate the heat transfers from conduction, convection and radiation.
- Understand the combustion phenomena in internal combustion engines and in fire spread in buildings.

Class Contact: Three hours weekly of lectures, tutorials, and laboratory for 12 weeks


Assessment: Two assignments (20%)(each of 10%), 2500-5000 words, one one-hour test (10%), laboratory (20%), and Final three hour examination (50%)

VMR8002 RESEARCH THESIS 2 FULL TIME

Locations: To be advised.

Pre-requisites: To be advised.

Descriptions: This unit of study is part of a research degree program. Information on research topics for the Faculty of Health, Engineering and Science may be found on the faculty website at the following link: http://www.vu.edu.au/Faculties/HealthEngineeringandScience/ResearchandResearchTraining/MajorResearchAreas/Assessment criteria and Core Research Graduate Attributes can be found on the Office for Postgraduate Research website at the following link: http://www.vu.edu.au/Research/OfficeforPostgraduateResearch/PoliciesProcessesandGuidelines/

Credit Points: 48

Learning Outcomes: To be advised.

Class Contact: To be advised.

Required Reading: To be advised.

Assessment: To be advised.

VMR8011 RESEARCH THESIS 1 PART TIME

Locations: To be advised.

Pre-requisites: To be advised.

Descriptions: This unit of study is part of a research degree program. Information on research topics for the Faculty of Health, Engineering and Science may be found on the faculty website at the following link: http://www.vu.edu.au/Faculties/HealthEngineeringandScience/ResearchandResearchTraining/MajorResearchAreas/Assessment criteria and Core Research Graduate Attributes can be found on the Office for Postgraduate Research website at the following link: http://www.vu.edu.au/Research/OfficeforPostgraduateResearch/PoliciesProcessesandGuidelines/

Credit Points: 24

Learning Outcomes: To be advised.

Class Contact: To be advised.

Required Reading: To be advised.

Assessment: To be advised.

VMR8012 RESEARCH THESIS 2 PART TIME

Locations: To be advised.

Pre-requisites: To be advised.

Descriptions: This unit of study is part of a research degree program. Information on research topics for the Faculty of Health, Engineering and Science may be found on the faculty website at the following link: http://www.vu.edu.au/Faculties/HealthEngineeringandScience/ResearchandResearchTraining/MajorResearchAreas/Assessment criteria and Core Research Graduate Attributes can be found on the Office for Postgraduate Research website at the following link: http://www.vu.edu.au/Research/OfficeforPostgraduateResearch/PoliciesProcessesandGuidelines/

Credit Points: 24

Learning Outcomes: To be advised.

Class Contact: To be advised.

Required Reading: To be advised.

Assessment: To be advised.
VMT5882 COMPUTATIONAL FLUID DYNAMICS

Locations: Footscray Park,
Pre-requisites: Nil.
Descriptions: The numerical schemes used for CFD, their accuracy and stability limit. Turbulence models: eddy viscosity concept, $k$-$
\nu$ model, RNG models; turbulence models near the wall. Boundary and initial conditions specification, wall boundary, open boundary, inlet and exit; How to divide the computation domain into small regions; Grid generation and near wall requirement; CFD simulations for smoke spread during a fire in building, air-conditioning system, air flow inside an engine manifold and exhaust system. Basic concept of LES and DNS, their applications and limitations.
Credit Points: 12
Learning Outcomes: To be advised.
Class Contact: Three hours weekly of lectures, tutorials, and computer-based laboratory per week for 12 weeks.
Assessment: Two assignments, 20% (each of 10%, 2500-5000 words); one one-hour test, 10%; laboratory, 20%; final three-hour examination, 50%. Students must attain a mark of at least 50% in each component to pass this subject.

VMV5781 ADVANCED DYNAMICS AND VIBRATIONS

Locations: Footscray Park,
Pre-requisites: Nil.
Credit Points: 12
Learning Outcomes: To be advised.
Class Contact: Three hours weekly of lectures and tutorials, laboratory for 12 weeks.
Assessment: Three assignments, 60% each of 4000-5000 words; two two-hour tests, 40%.

VMV5782 COMPUTATIONAL DYNAMICS

Locations: Footscray Park,
Pre-requisites: VMT5882 Advanced Dynamics and Vibration.
Credit Points: 12
Learning Outcomes: To be advised.
VPM5000 INTERMODAL FREIGHT MARKETS - DYNAMICS AND STRUCTURE

Locations: Werribee,
Pre-requisites: Nil

Descriptions: This subject is concerned with the way in which rapidly restructuring logistics and freight handling systems are impacting on the efficiency and effectiveness of service providers in integrated and intermodal freight markets. It focuses particularly on developing concepts, skills and techniques that will assist transport professionals and managers in intermodal freight handling firms not only to understand the economic and competitive drivers in the market place but also how to define their corporate 'product' and the way in which they do business. The subject meshes principles with practice and is developed within a framework or a detailed understanding of the Australian freight industry and its operations and practice, and it is informed also by extensive experience in Southeast Asian and Pacific Rim countries, in the United States and in Europe.

Credit Points: 16

Learning Outcomes: To be advised.

Class Contact: Forty five hours of block mode teaching.

Required Reading: Course Handbook provided to each student.

Assessment: Case study and seminar presentation, 10%; Syndicate group project, 40%; Research report, 50%.

VPM5001 INTEGRATING INTERMODAL FREIGHT SYSTEMS

Locations: Werribee,
Pre-requisites: VPM5000 - INTERMODAL FREIGHT MARKETS - DYNAMICS AND STRUCTURE

Descriptions: This subject focuses on the need to create seamlessness in transport services and operations that span complex networks involving different modes and many interface points - depots, terminals, warehouses, ports, for example. It recognises that intermodal efficiency may not be easily achieved; and that action may be required on many fronts - including operational capacity matching, alliance formation, information and e-Business streamlining, rationalising chain structures, eliminating market structure inefficiency and harmonising policies and policy frameworks. Particular attention is paid to capacity measurement, provision and adjustment in freight networks; to efficiency costs and pricing frameworks; to ways and means of achieving efficient chain and supply chain structures; and to overcoming policy and regulatory constraints. This subject draws heavily not only on the Australian freight industry but also on international experience.

Credit Points: 16

Learning Outcomes: To be advised.

Class Contact: Forty five hours of block mode teaching.

Required Reading: Course Handbook provided to each student.

Assessment: Case study and seminar presentation, 10%; Syndicate group project, 40%; Research report, 50%.

VPM5002 DEFINING STRATEGIES FOR INTERMODAL FREIGHT SYSTEMS

Locations: Werribee,
Pre-requisites: Nil

Descriptions: This subject builds on the concepts, skills and techniques developed in VPM5000 and VPM5001. In those subjects students examined the nature of the intermodal freight market and the role of the intermodal service provider in it; and the ways and means of managing to achieve seamless and efficient operations. In this subject the guiding questions are strategic ones and focus on positioning the firm for the future. More particularly, the subject develops a strong understanding of the notion of strategy and of an adequate conceptual framework within which to define strategies. It also outlines some quite specific attributes of strategy for intermodal firms and for the effective achievement of integrated freight networks. This subject draws heavily not only on the Australian freight industry but also on international experience.

Credit Points: 16

Learning Outcomes: To be advised.

Class Contact: Forty five hours of block mode teaching.

Required Reading: Course Handbook provided to each student.

Assessment: Case study and seminar presentation, 10%; Syndicate group project, 40%; Research report, 50%.

VPM5003 ADVANCED CHAIN SYSTEMS MANAGEMENT

Locations: Werribee,
Pre-requisites: Nil

Descriptions: This subject focuses on managing firms in chain systems to achieve fully integrated, rather than highly segmented and atomistic chains. It is concerned with ways and means of trading off system efficiency and costs in such a way as to deliver maximum customer value under varying economic and policy scenarios. This unit will add further to the students’ understanding of process mapping, the design of static and dynamic KPIs and dynamic modelling solutions for efficient chains.

Credit Points: 16

Learning Outcomes: To be advised.

Class Contact: Teaching for each unit is over a five day block.

Required Reading: Current available text book - student to be advised.

Assessment: A seminar paper, 10%; Group syndicate work, 40%; Research report, 50%.

VPM5004 FINANCIAL AND INVESTMENT PLANNING IN CHAIN SYSTEMS MANAGEMENT

Locations: Werribee,
Pre-requisites: Nil

Descriptions: Third party service providers, like other firms, must understand the relationship between the costs of investments and the use of capital and the benefits of investment. The timing of investments, cost/price relationships and the risks associated with investment are of exceptional importance to business success. This unit focuses on these issues and introduces students to concepts, financial modelling and technique for developing investment scenarios.

Credit Points: 16

Learning Outcomes: To be advised.

Class Contact: Teaching for each unit is over a five day block.
Required Reading: Current available text book - student to be advised.
Assessment: A seminar paper, 10%; Group syndicate work, 40%; Research report, 50%.

**VPM5005 STRATEGY, STRATEGIC OPTIONS AND BUSINESS SUCCESS IN CHAIN SYSTEMS MANAGEMENT**

Locations: Werribee,
Pre-requisites: Nil
Descriptions: Rapid and continuing changes in complex intermodal and chain systems are resulting in significantly increased competitive pressures for third party service provider firms. What strategic options are available to stakeholder firms? And on what basis can the traditional ‘transport provider’ firms achieve sustained business success? This unit examines in depth the basis for business success and examines particularly the notions of market and supply chain power and draws on current research into real-world examples to provide guidance for stakeholder firms.
Credit Points: 16
Learning Outcomes: To be advised.
Class Contact: Teaching for each unit is over a five day block.
Required Reading: Current available text book - student to be advised.
Assessment: A seminar paper, 10%; Group syndicate work, 40%; Research report, 50%.

**VPM5006 BLK FRGHT MRKT AND SUPPLY CHAIN: DYN AND STR**

Locations: To be advised,
Pre-requisites: To be advised.
Descriptions: To be advised.
Credit Points: 16
Learning Outcomes: To be advised.
Class Contact: To be advised.
Required Reading: To be advised.
Assessment: To be advised.

**VPM5007 MANAGING BULK SUPPLY CHAINS**

Locations: To be advised,
Pre-requisites: To be advised.
Descriptions: To be advised.
Credit Points: 16
Learning Outcomes: To be advised.
Class Contact: To be advised.
Required Reading: To be advised.
Assessment: To be advised.

**VPM5008 DEFINING STRATEGIES FOR BULK FREIGHT SYS**

Locations: To be advised,
Pre-requisites: To be advised.
Descriptions: To be advised.
Credit Points: 16
Learning Outcomes: To be advised.
Class Contact: To be advised.
Required Reading: To be advised.
Assessment: To be advised.

**VPM6000 MINOR THESIS**

Locations: To be advised,
Pre-requisites: To be advised.
Descriptions: To be advised.
Credit Points: 48
Learning Outcomes: To be advised.
Class Contact: To be advised.
Required Reading: To be advised.
Assessment: To be advised.

**VPP5600 PRINCIPLES OF PROJECT MANAGEMENT**

Locations: Footscray Park,
Pre-requisites: Nil.
Descriptions: The unit of study (UoS) will introduce and define project management as applicable to the concept, development design and documentation, procurement and maintenance, of any facilities including buildings and infrastructure. To introduce participants to Project Management Principles and learn about working in a project team environment. The UoS examines the following topics. Introduction to Project Management: PM’s role in achieving a successful project in industry and environment; definitions of the Management and Project Management. Trends in project management - historically and the current environment; managerial perspective; trend towards various modes of project delivery. Comparison of performance in public/private sectors; overview of future developments. The interrelationship between owner, developer, financial sources, designers and contractors. Role and task of functional activities of project managers: setting of project objectives; feasibility analysis; setting of budget; control of contract time and quality; risk apportionment between various parties. Design to user requirements: planning for life-cycle of the facility; management of small to medium size projects; role descriptions of project manager, architect, consultants and owners. Environmental and social constraints. Preparation EIS for building development project. Case studies illustrating the various aspects of project management.
Credit Points: 12
Learning Outcomes: It will equip professionals already in industry with advanced principles and techniques of project management to enable them to assume the role of project manager and/or become effective members of project management teams.
Class Contact: Three hours per week for one semester.
Required Reading: Formal class notes will be provided to students for each UoS. These notes are reviewed and updated regularly.
Assessment: Assignments, 20%; group project, 40%; examination, 40%. Students must attain a mark of 50% in each assessable component to pass this UoS.

**VPP5610 PROJECT PLANNING AND CONTROL**

Locations: Footscray Park,
Pre-requisites: Nil.
DESCRIPTIONS: The unit of study (UoS) will review the development process of a project from its inception through to feasibility and go-ahead decision; detail design documentation, construction commissioning and life cycle planning; evaluate the role and function of Project Management in this process; explain the purpose and to detail the theoretical basis of various techniques used for planning and managing the process. The UoS content includes: Systems approach to project planning; basic principles and theory of systems analysis; current trends in community project planning. Overview of UoS and introduction to project. Management of a Public Interest Project. Preparation of financial feasibility of a development project: factors involved, issues to be considered at concept stage; introduction of a case study. Capital decision making for project managers; cost concepts and cost factors. Project control and cost planning at feasibility and design stage. Cost versus quality assurance. Project control during development phase; breakdown of the project for estimating, budgeting and financial control; project time planning; networks and other scheduling techniques; resource levelling; line of balance concepts. Project cost planning and control in public sector; pre-development cost control, development cost control; cost control methods: data support system to cover contingency, indexation and methods of monitoring and reporting. Project team planning: duties and responsibilities of the project manager. Planning techniques for repetitive construction, multi-activity chart; principles of production engineering applied to repetitive processes in projects; special problems of repetitive projects. Principles of decision analysis; review of mathematical theory; application to decision process under uncertainty. Value engineering concepts and its application to design and development; application of value analysis in project management. Role and responsibilities of client’s member on P.M. team; risk sharing at various stages of project between the parties involved in the process; role of P.M. in client awareness of risks and rewards.

CREDIT POINTS: 12

LEARNING OUTCOMES: It will equip professionals already in industry with advanced principles and techniques of project management to enable them to assume the role of project manager and/or become effective members of project management teams.

CLASS CONTACT: Three hours per week for one semester

REQUIRED READING: Formal class notes will be provided to students for each UoS. These notes are reviewed and updated regularly.

ASSESSMENT: One major group project, 40%; two individual assignments, 20%; examination, 40%. Students must attain a mark of 50% in each assessable component to pass this UoS.

VPP5620 PROJECT STAKEHOLDERS MANAGEMENT

LOCATIONS: Footscray Park,

PRE-REQUISITES: Nil.

DESCRIPTIONS: The unit of study (UoS) will develop an understanding and appreciation of management environment in Australia; evaluate current state of standard forms of contracts and its relevance to procurement of buildings by project management techniques. The UoS examines formal organisational structures; role of project manager. Evaluation of managerial thought; management process - human and organisational aspect; human behaviour in organisations; current trends in organisational structure; comparison of U.S. and Australian management scene; overview of Australian management trends in construction industry. An introductory examination of the Australian legal system. The role of Parliament and the process of passing and the effect of legislation. The authority and the hierarchy of the Courts. General principles of contract law. An examination of the new draft form of AS4000 form of contract. A comparison of standard forms of contracts. An outline of the law relating to the principles concerning project management. Examination of the different types of project management. Formation of a contract. Terms of a contract. Avoidance. Discharge of a contract. Remedies. Quantum merit. Contractual and working relationship between various stakeholders in the project. Roles and Responsibilities of each stakeholder; risk apportionment between various stakeholders as well as determination of risks to be covered by insurances, bonds or other instruments.

CREDIT POINTS: 12

LEARNING OUTCOMES: It will equip professionals already in industry with processes and knowledge to deal with project scenarios. It will enable them to assume the role of and participating in the various functions involved in the project. The UoS will make the various stakeholders aware of their responsibilities as well as their liabilities.

CLASS CONTACT: Three hours per week for one semester

REQUIRED READING: Formal class notes will be provided to students for each UoS. These notes are reviewed and updated regularly.

ASSESSMENT: By assignments and projects and class participation. Assignment 1, 30%; exercises and assignments, 60%; class participation, 10%. Students must attain a mark of 50% in each assessable component to pass this UoS.

VPP5621 PROJECT RISK MANAGEMENT

LOCATIONS: Footscray Park,

PRE-REQUISITES: Nil.

DESCRIPTIONS: This unit of study (UoS) studies the fundamentals of risk management and risk management theories in relation to projects, definitions of risks and opportunities, risk management system, risk identification and classification, risk probability and impact, qualitative risk analysis techniques, quantitative risk analysis techniques, risk treatment methods, decision making, risk perception, risk communication, risk analysis software introduction, risk versus opportunity. Case studies are used to examine and develop understanding of risk management system and its implementation.

CREDIT POINTS: 12

LEARNING OUTCOMES: Upon completion of the UoS, the students should be able to understand risk and risk profile in a typical project, conduct a simple risk assessment and develop a risk management plan.

CLASS CONTACT: Three hours per week for one semester.

REQUIRED READING: Formal class notes will be provided to students for each UoS. These notes are reviewed and updated regularly.

ASSESSMENT: Assignments, 50%; Exam, 50%.

VPP5630 RESEARCH METHODS

LOCATIONS: To be advised., Footscray Park

PRE-REQUISITES: Nil.

DESCRIPTIONS: This unit of study (UoS) aims at informing students of the range of research methods appropriate to the project management discipline and developing basic skills for carrying out research. It introduces nature of research, types of research, research problems and objectives, literature review, research design, research ethics, data collection, measurement and analysis methods, typical qualitative and quantitative methods, development of research proposal, advanced information retrieval skills, etc.

CREDIT POINTS: 12

LEARNING OUTCOMES: Upon the completion of this UoS, the students should develop an understanding of research skills, techniques and methodologies for the completion of a full research proposal.

CLASS CONTACT: Three hours per week for one semester.

REQUIRED READING: Formal class notes will be provided to students for each UoS. These notes are reviewed and updated regularly.

ASSESSMENT: Assignment 1 (40%); Assignment 2 (Oral 20% and Report 40%)
VPP5640 PROJECT GOVERNANCE

Locations: Footscray Park,

Pre-requisites: To be advised.

Descriptions: Effective project decision making is recognised as a key feature of successful projects. Effective decision making leads to project delay and failure. Project Governance takes participants through the logical steps required for the establishment of a project governance framework for a project or organisation. Starting with problems typical of ineffective project governance, it develops a set of principles designed to overcome these problems and builds a framework based on these principles. Understanding and developing a comprehensive guide demonstrates how to populate the framework effectively, provides the accountabilities and responsibilities of the main roles, and describes how to integrate the project governance framework into the organisation. Whether participants are a project management practitioner or a student of project management.

Credit Points: 12

Learning Outcomes: On successful completion of this unit, students are expected to be able to:

- Establish the importance of project governance;
- Evaluate the causes and symptoms of ineffective project governance;
- Apply the principles of effective project governance and developing the project governance framework model;
- Assess the issues in implementing the project governance framework;
- Assess the governance relationship between programmes and projects;
- Apply the process towards an integrated project delivery framework.

Class Contact: Thirty-six (36) hours for one semester comprising lectures, seminars and group activities.


Assessment: Unit assessment is based on the final examination and assignments. Examination Final Examination 50%.

VPP5716 PROJECT DEVELOPMENT ANALYSIS AND REVIEW

Locations: Footscray Park,

Pre-requisites: Nil.

Descriptions: The UoS will develop skills and techniques to assess and manage projects and to appreciate the role and objectives of project managers and developers. Unit content examines management of project in the economy: An overview: typology of relationship between property, project management and property management. Feasibility and economic issues in development of project: Elements of a project development feasibility study. Parameters of project investment. Decisions including market analysis and financial evaluation techniques. Project investment criteria and considerations. Management of the development process (a client perspective): client briefing; formation of project team; design management, construction and financial management, project marketing. Financial feasibility - Case study and methods of evaluation. Law and property management - Strata titles; standard mortgage clauses; standard lease agreements. Land valuation and techniques for valuing project and property. Market survey and predictions - impact of macro-economic conditions on decisions to develop; marketing of space.

Credit Points: 12

Learning Outcomes: Upon the completion of this UoS, the students should be able to understand project development process, to assess and manage projects such as properties and to appreciate the role and objectives of developers and project managers.

Class Contact: Three hours per week for one semester.

Required Reading: Formal class notes will be provided to students for each UoS. These notes are reviewed and updated regularly.

Assessment: Assignments, 15%; group project, 45%; examination, 40%. Students must attain a mark of 50% in each assessable component to pass this UoS.

VPP6511 FIBRE OPTIC COMMUNICATION SYSTEMS

Locations: Footscray Park,

Pre-requisites: Eligibility for admission to Master’s course.


Credit Points: 12

Learning Outcomes: To be advised.

Class Contact: 36 hours lectures/tutorials/laboratories

Required Reading: Palais, J.C. 2005, Fibre Optic Communications, 5th edn, Prentice-Hall, NJ.

Assessment: Two assignments (each assignment report not exceeding 5000 words) 10% each; Two laboratory reports (word length of each not exceeding 2500 words) 10% each; Final examination (Two Hours) 60%.

VPP6512 ADVANCED FIBRE OPTICS

Locations: Footscray Park,

Pre-requisites: VPP6511 - FIBRE OPTIC COMMUNICATION SYSTEMS


Credit Points: 12

Learning Outcomes: To be advised.

Class Contact: 36 hours lectures/tutorials.


Assessment: Four assignments (each assignment report not exceeding 5000 words) 10% each. Final examination (Two Hours) 60%.

VPP6521 OPTICS AND LASERS

Locations: Footscray Park,

Pre-requisites: Eligibility for admission to Master’s course.


Credit Points: 12
Learning Outcomes: To be advised.

Class Contact: 36 hours lectures/tutorials/laboratories.


Assessment: Two assignments (each assignment report not exceeding 5000 words) 10% each. Two laboratory reports (word length of each not exceeding 2500 words) 10% each; Final examination (Two Hours) 60%.

VPP6522 DIGITAL COMMUNICATIONS OVER OPTICAL NETWORKS

Locations: Footscray Park,

Pre-requisites: VPP6511 - FIBRE OPTIC COMMUNICATION SYSTEMS


Credit Points: 12

Learning Outcomes: To be advised.

Class Contact: 36 hours lectures/tutorials/laboratories exercises.

Required Reading: Goralski, W. 2001, Optical Networking & WDM, SPIE, Bellingham WA

Assessment: Two assignments (each assignment report not exceeding 5000 words) 10% each. Two laboratory reports (word length of each not exceeding 2500 words) 10% each; Final examination (Two Hours) 60%.

VPP6531 QUANTUM OPTICS

Locations: Footscray Park,

Pre-requisites: Eligibility for admission to Master’s course.


Credit Points: 12

Learning Outcomes: To be advised.

Class Contact: 36 hours lectures/tutorials/laboratories exercises.


Assessment: Two assignments (each assignment report not exceeding 5000 words) 10% each. Two laboratory reports (word length of each not exceeding 2500 words) 10% each; Final examination (Two Hours) 60%.

VPP6532 OPTICAL FIBRE SENSORS

Locations: Footscray Park,

Pre-requisites: VPP6511 FIBRE OPTIC COMMUNICATION SYSTEMS

Descriptions: Introduction and basic concepts, materials interactions in optical fibre sensors, fibre optic components, special optical fibres for sensors, interferometric sensors, fibre-optic gyroscopes, intensity and wavelength-based sensors, multiplexed and distributed sensors. Fibre Bragg gratings for strain or temperature measurement. Applications of fibre sensors, e.g. smart structures.

Credit Points: 12

Learning Outcomes: To be advised.

Class Contact: 36 hours lectures/tutorials/laboratories exercises.


Assessment: Two assignments (each assignment report not exceeding 5000 words) 10% each. Two laboratory reports (word length of each not exceeding 2500 words) 10% each; Final examination (Two Hours), 60%.

VPP6541 OPTICAL MATERIALS

Locations: Footscray Park,

Pre-requisites: Eligibility for admission to Master’s course.

Descriptions: General Properties. Propagation of E/M waves in dielectric media; models of the refractive index; dispersion, absorption and the refractive index; frequency dependence; scattering; cross-sections. Properties of Lens Materials Commonly used materials in the ultra-violet, visible and infrared regions; transmittance, dispersion and the refractive index; environmental properties; examples. Solid State Laser Materials Host materials: crystalline materials, semiconductors, active ions; colour centres. Non-linear Materials Electro-optic effect; magneto-optic effect. Thin Film Materials Substrates. Optical damage mechanisms; self-focusing; damage thresholds; specification of cosmetic surface quality of optical components.

Credit Points: 12

Learning Outcomes: To be advised.

Class Contact: 36 hours lectures/tutorials.


Assessment: Four assignments (each assignment report not exceeding 5000 words) 10% each. Final examination (Two Hours) 60%.

VPP6542 DATA ACQUISITION

Locations: Footscray Park,

Pre-requisites: Eligibility for admission to Master’s course.

Descriptions: In this subject, students will learn advanced features of modern data acquisition and computer interfacing software, such as LabView. Students will be assigned projects that will involve the automation of an experiment, both in terms of the hardware and software requirements.

Credit Points: 12

Learning Outcomes: To be advised.

Class Contact: 36 hours including 24 hours of laboratory classes, 12 hours of lectures/tutorials.

Assessment: Two assignments (each assignment report not exceeding 5000 words) 10% each. Laboratory project (report not exceeding 10,000 words) 80%.

**VPP8001 RESEARCH THESIS 1 FULL TIME**

Locations: To be advised.

Pre-requisites: To be advised.

Descriptions: This unit of study is part of a research degree program. Information on research topics for the Faculty of Health, Engineering and Science may be found on the faculty website at the following link: http://www.vu.edu.au/Faculties/HealthEngineeringandScience/ResearchandResearchTraining/MajorResearchAreas/Assessment criteria and Core Research Graduate Attributes can be found on the Office for Postgraduate Research website at the following link: http://www.vu.edu.au/Research/OfficeforPostgraduateResearch/PolicyProcessesandGuidelines/

Credit Points: 48

Learning Outcomes: To be advised.

Class Contact: To be advised.

Required Reading: To be advised.

Assessment: To be advised.

**VPP8002 RESEARCH THESIS 2 FULL TIME**

Locations: To be advised.

Pre-requisites: To be advised.

Descriptions: This unit of study is part of a research degree program. Information on research topics for the Faculty of Health, Engineering and Science may be found on the faculty website at the following link: http://www.vu.edu.au/Faculties/HealthEngineeringandScience/ResearchandResearchTraining/MajorResearchAreas/Assessment criteria and Core Research Graduate Attributes can be found on the Office for Postgraduate Research website at the following link: http://www.vu.edu.au/Research/OfficeforPostgraduateResearch/PolicyProcessesandGuidelines/

Credit Points: 48

Learning Outcomes: To be advised.

Class Contact: To be advised.

Required Reading: To be advised.

Assessment: To be advised.

**VPP8011 RESEARCH THESIS 1 PART TIME**

Locations: To be advised.

Pre-requisites: To be advised.

Descriptions: This unit of study is part of a research degree program. Information on research topics for the Faculty of Health, Engineering and Science may be found on the faculty website at the following link: http://www.vu.edu.au/Faculties/HealthEngineeringandScience/ResearchandResearchTraining/MajorResearchAreas/Assessment criteria and Core Research Graduate Attributes can be found on the Office for Postgraduate Research website at the following link: http://www.vu.edu.au/Research/OfficeforPostgraduateResearch/PolicyProcessesandGuidelines/

Credit Points: 24

Learning Outcomes: To be advised.

Class Contact: To be advised.

Required Reading: To be advised.

Assessment: To be advised.

**VPP8012 RESEARCH THESIS 2 PART TIME**

Locations: To be advised.

Pre-requisites: To be advised.

Descriptions: To be advised.

Credit Points: 24

Learning Outcomes: To be advised.

Class Contact: To be advised.

Required Reading: To be advised.

Assessment: To be advised.

**VPP8050 PROJECT MANAGEMENT SPECIFIC TOPIC (PROJECT WORK - 12CP)**

Locations: Footscray Park

Pre-requisites: VPP5630 Research Methods or concurrently with it.

Descriptions: The unit of study (UoS) enables students to: identify a project problem and critically review relevant literature; determine appropriate methods to study the problem; collect, and analyse data, and generate results using suitable statistical and analytical techniques; draw conclusions, critically evaluate the process undertaken and make recommendations for future research and for practice; present the results of the project undertaken, both clearly and accurately in a written report. The report topic chosen will allow the candidate to develop a methodology and to apply it to an appropriate problem or situation. The report will normally be from 8000 to 15,000 words. It will detail the problem, relevant literature, analysis conducted, conclusions and recommendations. Students will be supervised by an academic member of staff and where appropriate by a supervisor from another institution or from industry.

Credit Points: 12

Learning Outcomes: Students will be able to define and solve problems and issues related to industry. Be capable of analysing and finding appropriate solutions to problems using analytical and statistical techniques.

Class Contact: A three-hour briefing is given to students at the start of the UoS. Three hours per week for two semesters.

Required Reading: Formal class notes will be provided to students for each UoS. These notes are reviewed and updated regularly.

Assessment: Assessment will be by project work and report.

**VPP8060 PROJECT MANAGEMENT SPECIFIC TOPIC (PROJECT WORK - 24CP)**

Locations: Footscray Park

Pre-requisites: VPP5630 Research Methods or concurrently with it.

Descriptions: The unit of study (UoS) enables students to: identify a project problem and critically review relevant literature; determine appropriate methods to study the problem; collect, and analyse data, and generate results using suitable statistical and analytical techniques; draw conclusions, critically evaluate the process undertaken and make recommendations for future research and for practice; present the results of the project undertaken, both clearly and accurately in a written report. The report topic chosen will allow the candidate to develop a methodology and to apply it to an appropriate problem or situation. The report will normally be from 8000 to 15,000 words. It will detail the problem, relevant literature, analysis conducted, conclusions and recommendations. Students will be supervised by an academic member of staff and where appropriate by a supervisor from another institution or from industry.

Credit Points: 24

Learning Outcomes: Students will be able to define and solve problems and issues related to industry. Be capable of analysing and finding appropriate solutions to problems using analytical and statistical techniques.
A three-hour briefing is given to students at the start of the UoS. Six hours per week for one semester.

Required Reading: Formal class notes will be provided to students for each UoS. These notes are reviewed and updated regularly.

Assessment: Assessment will be by project work and report.

VPP8070 MINOR THESIS (PART TIME - OVER 2 SEMESTERS)

Locations: Footscray Park,

Pre-requisites: VPP5630 Research Methods

Descriptions: The student needs to choose a topic related to project or project management from the real world. Identify a research problem and critically review the relevant literature; determine appropriate methods to study the problem; collect, and analyze data, and generate results using suitable statistical and analytical techniques; draw conclusions, critically evaluate the process undertaken and make recommendations for future research and for practice; present the results of the research undertaken, both clearly and accurately in a written thesis. The research topic chosen will allow the candidate to develop a methodology and to apply it to an appropriate problem or situation. The thesis will normally be from 30,000 to 50,000 words. It will report on independently conducted research which demonstrates the student’s ability to clearly define a problem, to undertake a detailed literature search and review the literature on the topic area. The student shall also demonstrate their ability to develop and/or apply models to study the problem and good data selection, collection and analysis skills. Students will normally be supervised by an academic member of the university and by a joint supervisor from the industry.

Credit Points: 48

Learning Outcomes: Upon the completion of this subject, the students should:
- have developed an in-depth knowledge of particular fields which they chose;
- be able to carry out independent research;
- have developed critical, creative and analytical thinking and effective problem-solving;
- have developed written and verbal communication skills in accepted standards of scholarship, style and presentation.

Class Contact: A three-hour briefing is given to students at the start of the subject. Twelve hours per week one semester.

Required Reading: Formal class notes will be provided to students for each UoS. These notes are reviewed and updated regularly.

Assessment: To be advised.

VPP8080 MINOR THESIS (FULL TIME - OVER 1 SEMESTER)

Locations: Footscray Park,

Pre-requisites: VPP5630 Research Methods

Descriptions: The student needs to choose a topic related to project or project management from the real world. Identify a research problem and critically review the relevant literature; determine appropriate methods to study the problem; collect, and analyze data, and generate results using suitable statistical and analytical techniques; draw conclusions, critically evaluate the process undertaken and make recommendations for future research and for practice; present the results of the research undertaken, both clearly and accurately in a written thesis. The research topic chosen will allow the candidate to develop a methodology and to apply it to an appropriate problem or situation. The thesis will normally be from 30,000 to 50,000 words. It will report on independently conducted research which demonstrates the student’s ability to clearly define a problem, to undertake a detailed literature search and review the literature on the topic area. The student shall also demonstrate their ability to develop and/or apply models to study the problem and good data selection, collection and analysis skills. Students will normally be supervised by an academic member of the university and by a joint supervisor from the industry.

Credit Points: 48

Learning Outcomes: Upon the completion of this subject, the students should:
- have developed an in-depth knowledge of particular fields which they chose;
- be able to carry out independent research;
- have developed critical, creative and analytical thinking and effective problem-solving;
- have developed written and verbal communication skills in accepted standards of scholarship, style and presentation.

Class Contact: A three-hour briefing is given to students at the start of the subject.

Required Reading: Formal class notes will be provided to students for each UoS. These notes are reviewed and updated regularly.

Assessment: To be advised.

VPT8001 RESEARCH THESIS 1 FULL TIME

Locations: To be advised.

Pre-requisites: To be advised.

Descriptions: This unit of study is part of a research degree program. Information on research topics for the Faculty of Health, Engineering and Science may be found on the faculty website at the following link: http://www.vu.edu.au/Faculties/HealthEngineeringandScience/ResearchandResearchTraining/MajorResearchAreas/Assessment criteria and Core Research Graduate Attributes can be found on the Office for Postgraduate Research website at the following link: http://www.vu.edu.au/Research/OfficeforPostgraduateResearch/PoliciesandGuidelines/

Credit Points: 48

Learning Outcomes: To be advised.

Class Contact: To be advised.

Required Reading: To be advised.

Assessment: To be advised.

VPT8002 RESEARCH THESIS 2 FULL TIME

Locations: To be advised.

Pre-requisites: To be advised.

Descriptions: This unit of study is part of a research degree program. Information on research topics for the Faculty of Health, Engineering and Science may be found on the faculty website at the following link: http://www.vu.edu.au/Faculties/HealthEngineeringandScience/ResearchandResearchTraining/MajorResearchAreas/Assessment criteria and Core Research Graduate Attributes can be found on the Office for Postgraduate Research website at the following link: http://www.vu.edu.au/Research/OfficeforPostgraduateResearch/PoliciesandGuidelines/

Credit Points: 48

Learning Outcomes: To be advised.

Class Contact: To be advised.

Required Reading: To be advised.

Assessment: To be advised.
VPT8011 RESEARCH THESIS 1 PART TIME

Locations: To be advised.

Pre-requisites: To be advised.

Descriptions: This unit of study is part of a research degree program. Information on research topics for the Faculty of Health, Engineering and Science may be found on the faculty website at the following link: http://www.vu.edu.au/Faculties/HealthEngineeringandScience/ResearchandResearchTraining/MajorResearchAreas/

Assessment criteria and Core Research Graduate Attributes can be found on the Office for Postgraduate Research website at the following link: http://www.vu.edu.au/Research/OfficeforPostgraduateResearch/PolicyProcessesandGuidelines/

Credit Points: 24

Learning Outcomes: To be advised.

Class Contact: To be advised.

Required Reading: To be advised.

Assessment: To be advised.

VPT8012 RESEARCH THESIS 2 PART TIME

Locations: To be advised.

Pre-requisites: To be advised.

Descriptions: This unit of study is part of a research degree program. Information on research topics for the Faculty of Health, Engineering and Science may be found on the faculty website at the following link: http://www.vu.edu.au/Faculties/HealthEngineeringandScience/ResearchandResearchTraining/MajorResearchAreas/

Assessment criteria and Core Research Graduate Attributes can be found on the Office for Postgraduate Research website at the following link: http://www.vu.edu.au/Research/OfficeforPostgraduateResearch/PolicyProcessesandGuidelines/

Credit Points: 24

Learning Outcomes: To be advised.

Class Contact: To be advised.

Required Reading: To be advised.

Assessment: To be advised.
SCHOOL OF NURSING AND MIDWIFERY

Below are details of courses offered by the Faculty of School of Nursing and Midwifery in 2010. This information is also available online on the University’s searchable courses database at www.vu.edu.au/courses

NOTE: Courses available to International students are marked with the (I) symbol.

BACHELOR OF NURSING

Course Code: HBBN

Campus: St Albans

Course Objectives: To prepare work-ready graduates as beginning practitioners who meet requirements for registration as Division 1 nurses with the Nurses Board of Victoria. Through their program of study, graduates will have been enabled to:

- take a lifespan and developmental approach to providing culturally sensitive nursing care to the diverse Australian community;
- provide quality nursing care in a range of healthcare settings;
- apply a health promotion and educational focus to their work;
- undertake a team based and multidisciplinary approach to care;
- have well-developed clinical decision-making skills; and
- adopt a lifelong approach to learning.

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- take a lifespan and developmental approach to providing culturally sensitive nursing care to the diverse Australian community;
- provide quality nursing care in a range of healthcare settings;
- apply a health promotion and educational focus to their work;
- undertake a team based and multidisciplinary approach to care;
- have well-developed clinical decision-making skills; and
- adopt a lifelong approach to learning.

Course Duration: 3 years

Admission Requirements: Eligibility Requirements To qualify for admission to the course applicants must: 1. have successfully completed the Victorian Certificate of Education (VCE) or equivalent and meet all extra requirements and selection procedures listed through VTAC OR 2. be currently registered (or eligible to register) as a Division 2 registered nurse with the Nurses Board of Victoria and have satisfactorily completed a bridging program with a bioscience unit and a transition unit OR 3. have successfully completed an Australian bachelor's degree or equivalent. Alternative entry Applicants who do not meet the normal admission requirements but who possess appropriate educational qualifications, work or life experiences which would enable them to successfully undertake the course, will be considered for admission. Persons of Aboriginal or Torres Strait Islander descent are encouraged to apply for admission. Applicants will be assessed on an individual basis to determine their suitability and potential for success in the course. Applicants who consider their capacity to qualify under normal entry provisions have been limited by some disadvantage, for example, illness, disability, economic hardship or isolation may apply to be considered as a disadvantaged person. Applicants will be assessed on an individual basis to determine their suitability and potential for success in the course. Selection Criteria Year 12 ENTER and two-stage process with a middle band of approximately 20%. Division 2 Nurses and Non-Year 12 Academic record, STAT Multiple Choice (not VU VE), VTAC Pi (Personal Information) form. Graduates from other bachelor degrees Academic record, VTAC Pi (Personal Information) form, interview. For international students the following English language requirement is needed for entry to the course where their education was conducted in a language other than English. “An International English Language Testing System (IELTS) Academic test score of at least 6 in Reading and Listening, and a score of at least 6 in Writing and Speaking and an overall band score of at least 6. This requirement is based on the Nurses Board of Victoria level of English attainment for initial registration and indicates the level of proficiency expected for safe practice in nursing in a clinical setting. Students require this level of English proficiency because they will be practising and communicating in the workplace from semester 2 of the course.

Course Structure: The course is offered over three years on a full-time basis.

Year 1

Semester 1
- RBM1102 BIOSCIENCE 1: HUMAN BODY STRUCTURE AND FUNCTION 12
- ASE1101 HEALTH 12
- APT311 PSYCHOLOGY ACROSS THE LIFESPAN 12
- HNB1101 FRAMEWORKS FOR NURSING PRACTICE 12

Semester 2
- RBM1203 BIOSCIENCE 2: HUMAN BODY STRUCTURE & FUNCTION 12
- HNB1201 WORKING WITH FAMILIES 12
- HNB1202 HEALTH PRIORITIES & NURSING 1 12
- HNB1203 CLINICAL PRACTICUM 1 12

Year 2

Semester 1
- RBM2104 PATHOPHYSIOLOGY & QUALITY USE OF MEDICINES 1 12
- HNB2101 WORKING WITH EVIDENCE IN PRACTICE 12
- HNB2102 HEALTH PRIORITIES & NURSING 2 12
- HNB2103 CLINICAL PRACTICUM 2 12

Semester 2
- RBM2205 PATHOPHYSIOLOGY & QUALITY USE OF MEDICINES 2 12
- HNB2202 HEALTH PRIORITIES & NURSING 3 12
- HNB2203 CLINICAL PRACTICUM 3 12
- HNB2204 HEALTH PRIORITIES & NURSING 4 12

Year 3

Semester 1
- HNB3117 HEALTH PRIORITIES & NURSING 5 12
- HNB3118 NURSING AND COMPLEX CARE 12
- HNB3119 CLINICAL PRACTICUM 4 12
- HNB3120 ISSUES IN PROFESSIONAL PRACTICE 12

Semester 2
- HNB3205 NURSING SPECIFIC POPULATIONS 12
- HNB3206 CLINICAL PRACTICUM 5 24

Theory Elective worth 12 Credit Points
BACHELOR OF NURSING (DIVISION 2 ENTRY)
Course Code: HBDE
Campus: St Albans

Course Objectives: (For continuing students only)
The Course seeks to provide students with the following attributes:

- A sound knowledge of the theory and practice of nursing.
- An understanding and appreciation of health and illness as it is influenced by a variety of political, social, psychological, economic, cultural, (in particular Indigenous Australian culture), and biological factors.
- A broad range of clinical practice skills that can be used to provide care to individuals, families, and communities within the context of the promotion of health, the prevention of ill health, the management of ill health, and attempts to promote recovery from ill health.
- Comprehensive nursing skills that will lead to employment and beginning practice in a broad range of health care settings.
- An ability to practice independently, in an ethical and professional manner and, collaboratively in multidisciplinary settings.
- Locate, evaluate, manage and use information technology effectively.
- Prepare students in ways to help them begin to deal with the world of work with its attendant uncertainties, ambiguities, conflicts and change.

Course Duration: To be advised.

Admission Requirements: Prerequisites
To qualify for admission to this course applicants must have:

- current registration as a Division 2 Registered Nurse (or eligibility for registration) with the Nurses Board of Victoria.
- satisfactory completion of recognised study in health assessment and tertiary study skills, human bioscience and psychology.

For students who have not completed the appropriate recognised study as mentioned above, a bridging program is available prior to commencement of the course in order to meet the above prerequisites. The program is offered in January/February each year and will consist of the following units of study:

- Introduction to Health Assessment;
- Human Bioscience;
- Psychology.

The school has a Recognition of Prior Learning Committee, which, under the Schools Operational Guidelines, oversees this process and develops guidelines or policy (in accordance with Faculty and University policies) where this is needed.

Selection mode
Applicants will be required to apply through VTAC and will receive an offer, conditional upon meeting the prerequisites.

Aborigines and Torres Strait Islanders
Persons of Aboriginal or Torres Strait Islander descent are encouraged to apply for admission. Applicants will be assessed on an individual basis to determine the suitability and potential for success in the course.

Entry as a Disadvantaged Person
Applicants who consider that their capacity to qualify under normal entry provisions has been limited by some disadvantage, for example, illness, disability, economic hardship, isolation or English language learning difficulties, may apply to be considered as a disadvantaged person. Applicants will be assessed on an individual basis to determine the suitability and potential for success in the course.

Course Structure: The course is 4 semesters in length, and is offered to full-time students over two years. Students undertaking a part-time load, which is possible under certain circumstances, would normally complete the course in a maximum of 8 semesters or four years. Any part-time load is negotiated between the student and the Course Coordinator. Apart from the clinical practicum units of study, all units of study are currently offered in an on campus’ mode, however there are on-line components to some units of study. In the future more use may be made of this teaching medium with some units of study being offered in off campus’ or mixed’ mode.

Year 1, Semester 1
HNB2132  NURSING THEORY 2: ACUTE CARE 8
HNB2134  CLINICAL PRACTICUM 2: ACUTE CARE 8
HNB1115  HEALTHCARE LAW AND ETHICS 8
HNB3101  RESEARCH FOR PRACTICE 8
HNB2127  NURSING THEORY 5: MENTAL HEALTH AND ILLNESS A 8
RBM2110  HUMAN BIOSCIENCE 3 8

Year 1, Semester 2
HNB2241  NURSING THEORY 4 ACUTE CARE 8
HNB2234  CLINICAL PRACTICUM 4: ACUTE CARE 8
HNB2227  NURSING THEORY 5: MENTAL HEALTH AND ILLNESS B 8
HNB2239  CLINICAL PRACTICUM 5 MENTAL HEALTH & ILLNESS 16
RBM2210  HUMAN BIOSCIENCE 4 8

Year 2, Semester 1
HNB3236  TRANSITION TO PROFESSIONAL PRACTICE 8
HNB3100  PHARMACOLOGY IN NURSING PRACTICE 8
HNB3108  NURSING THEORY 6 CHILD ADOLESCENT & FAMILY 8
HNB3105  NURSING THEORY 7 - ACUTE CARE 8
HNB3109  CLINICAL PRACTICUM 7: COORDINATED CARE 16

Year 2, Semester 2
HNB3107  HEALTH & ILLNESS IN THE COMMUNITY 8
HNB3251  NURSING THEORY 8: (ELECTIVE) ACUTE CARE 8
HNB3202  NURSING THEORY 8: (ELECTIVE) MENTAL HEALTH & ILLNESS 8
HNB3204  NURSING THEORY 8: (ELECTIVE) CHILD ADOLESCENT & FAMILY 8
HNB3201  NURSING THEORY 8 (ELECTIVE): HEALTH & ILLNESS IN OLDER ADULTS 8

Clinical Practicum 8: Electives (Choose one)
HNB3252  CLINICAL PRACTICUM B: (ELECTIVE) ACUTE CARE 16
HNB3230  CLINICAL PRACTICUM B: (ELECTIVE): MENTAL HEALTH & ILLNESS 16
HNB3248  CLINICAL PRACTICUM B (ELECTIVE): CHILD, ADOLESCENT & FAMILY 16
HNB3249  CLINICAL PRACTICUM B (ELECTIVE): HEALTH & ILLNESS IN OLDER ADULTS 16

Consolidation
HNB3250  CLINICAL PRACTICUM 9: CONSOLIDATION 16
BACHELOR OF NURSING (GRADUATE ENTRY)
Course Code: HBGE
Campus: St Albans
Course Objectives: (For continuing students only)
The Course aims to provide students with the following attributes:
• a sound knowledge of the theory and practice of nursing;
• an understanding and appreciation of health and illness as it is influenced by a variety of political, social, psychological, economic, cultural, and biological factors;
• a broad range of clinical practice skills that can be used to provide care to individuals, families, and communities within the context of the promotion of health, the prevention of ill health, the management of ill health, and attempts to promote recovery from ill health;
• comprehension nursing skills that will lead to employment and beginning practice in a broad range of health care settings;
• an ability to practice independently, in an ethical and professional manner and collaboratively in multidisciplinary settings;
• an ability institutional and social change in health care settings;
• locate, evaluate, manage and use information technology effectively.

Course Duration: To be advised.

Admission Requirements: To qualify for admission to this course applicants must be graduates of other degree programs and must have satisfactory completion of recognised graduate study in Introduction to Nursing, Human Bioscience and Psychology.

For students who have not completed the appropriate higher degree study, a bridging program is available prior to commencement of the course in order to meet the above prerequisites. The program is offered in January - February each year and will consist of the following Units of Study:
• Introduction to Nursing Studies;
• Human Bioscience;
• Psychology.

Course Structure: This course will be offered full-time over two years.
Year 1, Semester 1
HNB2132 NURSING THEORY 2: ACUTE CARE 8
HNB2134 CLINICAL PRACTICUM 2: ACUTE CARE 8
HNB2136 CLINICAL PRACTICUM 3: HEALTH AND ILLNESS IN OLDER ADULTS 8
HNB2127 NURSING THEORY 5: MENTAL HEALTH AND ILLNESS A 8
RBM2110 HUMAN BIOSCIENCE 3 8
Year 1, Semester 2
HNB2241 NURSING THEORY 4 ACUTE CARE 8
HNB2234 CLINICAL PRACTICUM 4: ACUTE CARE 8
HNB2227 NURSING THEORY 5: MENTAL HEALTH AND ILLNESS B 8
HNB2239 CLINICAL PRACTICUM 5 MENTAL HEALTH & ILLNESS 16
RBM2210 HUMAN BIOSCIENCE 4 8
Year 2, Semester 1
HNB1115 HEALTHCARE LAW AND ETHICS 8
HNB3100 PHARMACOLOGY IN NURSING PRACTICE 8
HNB3108 NURSING THEORY 6 CHILD ADOLESCENT & FAMILY 8
HNB3105 NURSING THEORY 7 - ACUTE CARE 8
HNB3109 CLINICAL PRACTICUM 7: COORDINATED CARE 16
Year 2, Semester 2
HNB3107 HEALTH & ILLNESS IN THE COMMUNITY 8
Nursing Theory 8: Electives (Choose one)
HNB3251 NURSING THEORY 8: (ELECTIVE) ACUTE CARE 8
HNB3202 NURSING THEORY 8: (ELECTIVE) MENTAL HEALTH & ILLNESS 8
HNB3204 NURSING THEORY 8: (ELECTIVE) CHILD ADOLESCENT & FAMILY 8
HNB3201 NURSING THEORY 8 (ELECTIVE): HEALTH & ILLNESS IN OLDER ADULTS 8
Clinical Practicum 8: Electives (Choose one)
HNB3252 CLINICAL PRACTICUM 8: (ELECTIVE) ACUTE CARE 16
HNB3230 CLINICAL PRACTICUM 8 (ELECTIVE): MENTAL HEALTH & ILLNESS 16
HNB3248 CLINICAL PRACTICUM 8 (ELECTIVE): CHILD, ADOLESCENT & FAMILY 16
HNB3249 CLINICAL PRACTICUM 8 (ELECTIVE): HEALTH & ILLNESS IN OLDER ADULTS 16
Consolidation
HNB3250 CLINICAL PRACTICUM 9: CONSOLIDATION 16

BACHELOR OF NURSING (PRE-REGISTRATION) (MENTAL HEALTH MAJOR)
Course Code: HBMH
Campus: St Albans
Course Objectives: (For continuing students only)
The aims of the course are to:
• prepare competent beginning nurse practitioners who are eligible and able to practice in a variety of health care settings with a particular focus on mental health nursing;
• provide an education which contributes to the student’s personal, professional, and intellectual growth;
• prepare students in ways to help them begin to deal with the world of work with its attendant uncertainties, ambiguities, conflicts and change.
• prepare students who can participate effectively in a teamwork approach; and
• enable graduates to register professionally as Division 1 nurses with the Nurses Board of Victoria.

Course Duration: To be advised.

Admission Requirements: To qualify for admission to the course applicants must have successfully completed the Victorian Certificate of Education (VCE) including Units 3 and 4 with a study score of at least 25 in English any and study score of at least 20 in one of biology, chemistry, health and human development, physics, psychology or mathematics (any combination). Applicants who do not meet the normal admission requirements but who process appropriate educational qualifications, work or life experiences which would enable them to successfully undertake the course, will be considered for admission.

Course Structure: The course is offered over three years on a full-time or part-time equivalent.
Admission requirements:

Course duration:

Course objectives:

Course Code:

BACHELOR OF MIDWIFERY

Course Code: HBMI

Campus: Werribee, City Flinders, Sunbury

Course Objectives: (Continuing students only)

Course Structure:

Year Two

Semester One

HNB2132 NURSING THEORY 2: ACUTE CARE 8
HNB2134 CLINICAL PRACTICUM 2: ACUTE CARE 8
HNB2136 CLINICAL PRACTICUM 3: HEALTH AND ILLNESS IN OLDER ADULTS 8
HNB2138 NURSING THEORY 3 HEALTH & ILLNESS IN OLDER ADULTS 8
HNB2127 NURSING THEORY 5: MENTAL HEALTH AND ILLNESS A 8
RBM2110 HUMAN BIOSCIENCE 3 8

Semester Two

HNB2241 NURSING THEORY 4 ACUTE CARE 8
HNB2234 CLINICAL PRACTICUM 4: ACUTE CARE 8
HNB2227 NURSING THEORY 5: MENTAL HEALTH AND ILLNESS B 8
HNB2239 CLINICAL PRACTICUM 5 MENTAL HEALTH & ILLNESS 16
RBM2210 HUMAN BIOSCIENCE 4 8

Year Three

Semester One

HNB3236 TRANSITION TO PROFESSIONAL PRACTICE 8
HNB3100 PHARMACOLOGY IN NURSING PRACTICE 8
HNB3108 NURSING THEORY 6 CHILD ADOLESCENT & FAMILY 8
HNB3105 NURSING THEORY 7 - ACUTE CARE 8
HNB3109 CLINICAL PRACTICUM 7: COORDINATED CARE 16

Semester Two

HNB3107 HEALTH & ILLNESS IN THE COMMUNITY 8
HNB3215 NURSING THEORY 8: MENTAL HEALTH NURSING 8
HNB3216 CLINICAL PRACTICUM 8: MENTAL HEALTH NURSING 32

BACHELOR OF MIDWIFERY

Course Code: HBNW

Course Objectives: This degree prepares graduates to be competent midwives, within a woman-centred philosophy, able to work collaboratively with other health care professionals. Studies include anatomy and physiology, psychology, sociology and women's health.

The course aims to prepare midwives who will be able to:

- practise competently and confidently in a variety of maternity settings;
- demonstrate practice which is evidence-informed, according to the ACMI Competency Standards for Midwives (2001);
- reflect attitudes which are congruent with the philosophy of valuing women, women-centred care, and woman-midwife partnership;
- work both as a primary carer and in collaboration with other healthcare professionals in providing comprehensive care through women’s reproductive life; and
- achieve employment in a variety of maternity care settings.

Course Duration: To be advised.

Admission Requirements: To qualify for admission to the course, an applicant must have successfully completed the Victorian Certificate of Education (VCE), with Units 1 and 2 Maths (any); Units 3 and 4 English and a study score of at least 20, Units 3 and 4 of at least one of the following: Biology, Chemistry, Health Education, Psychology, Human Development, Physics, or Maths (any).

Applicants who do not meet the normal admission requirements but who possess appropriate educational qualifications, work or life experiences which would enable them to successfully undertake the course, will be considered for admission.

Course Regulations

The following should be read in conjunction with the faculty regulations detailed earlier in this Handbook, and the University Statutes and Regulations.

Practical Placement

Students should note that they will be subject to safety screening (Police checks) before placement in accordance with Department of Human Services policy (March 2000). Students may also be asked to declare their immunization status to satisfy the requirements of the hospital/agency at which they will be placed.

Students’ progress towards competency is gauged against the expected minimum competency rating for each semester of the course. Absence from practice placement may affect a student's ability to demonstrate the expected level of competency. Students who have been absent from practice experience during semester, are required to provide appropriate documentation (eg medical certificate or a statutory declaration) to account for their absence.
The provision of make-up time is at the discretion of the School and students should not assume that it is an automatic right. At the discretion of the School additional midwifery practice may be negotiated within a maximum stated time frame to attain competency. Students who do not provide documentary evidence or do not attend the arranged additional practice hours will incur a “fail” grade and will be required to repeat the relevant Midwifery subjects.

Academic Progression Unsatisfactory progress Students will be deemed to have made unsatisfactory progress if they fail to complete the course in six calendar years (on full-time basis).

Each sequential stage of the course must be completed before progression to a subsequent stage.

Course Structure: The course is offered over three years on a full-time basis. (Year 1 only commencing in 2006)

Year 1
Semester One
RBM1515  ANATOMY AND PHYSIOLOGY 1  8
APT1310  PSYCHOLOGY 1  12
HNMT113  FOUNDATIONS IN MIDWIFERY PRACTICE  12
HNMT115  MIDWIFERY STUDIES 1: THE CHILDBEARING JOURNEY  8
HNMT114  CONTINUITY OF CARE 1  8
Semester Two
RBM1525  ANATOMY AND PHYSIOLOGY 8
ASE1320  SOCIOLOGY OF INDIGENOUS HEALTH 8
HNMT201  MIDWIFERY STUDIES 2: THE CHILDBEARING JOURNEY  8
HNMT202  MIDWIFERY PRACTICE 2: THE CHILDBEARING JOURNEY  24

Year 2
Semester Three
HNMT315  MIDWIFERY STUD 6-BABIES NEED EXTRA CARE 8
HNMT314  MIDWIFERY PRACTICE 6-BABIES NEED EXTRA CARE 16
HNMT315  MIDWIFERY PRACTICE 7 CONSOLIDATION 24

For theoretical subjects 1 credit point = 7 hours approximately
For clinical subjects 1 credit point = 10 hours approximately but varies according to NBV requirements.

BACHELOR OF NURSING (PRE-REGISTRATION)
Course Code: HBRN
Campus: St Albans

Course Objectives: (For continuing students only)
The aims of the course are to:

- prepare competent beginning nurse practitioners who are eligible and able to practice in a variety of health care settings;
- provide an education which contributes to the student’s personal, professional, and intellectual growth;
- prepare students in ways to help them begin to deal with the world of work with its attendant uncertainties, ambiguities, conflicts and change.
- prepare students who can participate effectively in a teamwork approach; and
- enable graduates to register professionally as Division 1 nurses with the Nurses Board of Victoria.

Course Duration: To be advised.

Admission Requirements: To qualify for admission to the course applicants must have successfully completed the Victorian Certificate of Education (VCE) including Units 3 and 4 with a study score of at least 25 in English any and study score of at least 20 in one of biology, chemistry, health and human development, physics, psychology or mathematics (any combination). Applicants who do not meet the normal admission requirements but who possess appropriate educational qualifications, work or life experiences which would enable them to successfully undertake the course, will be considered for admission.

Course Structure: The course is offered over three years on a full-time or part-time equivalent.

Year 2
Semester One
HNMT313  MIDWIFERY STUD 6-BABIES NEED EXTRA CARE 8
HNMT314  MIDWIFERY PRACTICE 6-BABIES NEED EXTRA CARE 16
HNMT315  MIDWIFERY PRACTICE 7 CONSOLIDATION 24

For theoretical subjects 1 credit point = 7 hours approximately
For clinical subjects 1 credit point = 10 hours approximately but varies according to NBV requirements.

BACHELOR OF NURSING (PRE-REGISTRATION)
Course Code: HBRN
Campus: St Albans

Course Objectives: (For continuing students only)
The aims of the course are to:

- prepare competent beginning nurse practitioners who are eligible and able to practice in a variety of health care settings;
- provide an education which contributes to the student’s personal, professional, and intellectual growth;
- prepare students in ways to help them begin to deal with the world of work with its attendant uncertainties, ambiguities, conflicts and change.
- prepare students who can participate effectively in a teamwork approach; and
- enable graduates to register professionally as Division 1 nurses with the Nurses Board of Victoria.

Course Duration: To be advised.

Admission Requirements: To qualify for admission to the course applicants must have successfully completed the Victorian Certificate of Education (VCE) including Units 3 and 4 with a study score of at least 25 in English any and study score of at least 20 in one of biology, chemistry, health and human development, physics, psychology or mathematics (any combination). Applicants who do not meet the normal admission requirements but who possess appropriate educational qualifications, work or life experiences which would enable them to successfully undertake the course, will be considered for admission.

Course Structure: The course is offered over three years on a full-time or part-time equivalent.

Year 2
Semester One
HNMT313  MIDWIFERY STUD 6-BABIES NEED EXTRA CARE 8
HNMT314  MIDWIFERY PRACTICE 6-BABIES NEED EXTRA CARE 16
HNMT315  MIDWIFERY PRACTICE 7 CONSOLIDATION 24

For theoretical subjects 1 credit point = 7 hours approximately
For clinical subjects 1 credit point = 10 hours approximately but varies according to NBV requirements.
FACULTY OF HEALTH, ENGINEERING AND SCIENCE

Year 3
Semester One

HNB3236  TRANSITION TO PROFESSIONAL PRACTICE  8
HNB3100  PHARMACOLOGY IN NURSING PRACTICE  8
HNB3108  NURSING THEORY 6 CHILD ADOLESCENT & FAMILY  8
HNB3105  NURSING THEORY 7 - ACUTE CARE  8
HNB3109  CLINICAL PRACTICUM 7: COORDINATED CARE  16

Semester Two

HNB3107  HEALTH & ILLNESS IN THE COMMUNITY  8
Nursing Theory 8: Electives (Choose one)
HNB3251  NURSING THEORY 8: (ELECTIVE) ACUTE CARE  8
HNB3202  NURSING THEORY 8: (ELECTIVE) MENTAL HEALTH & ILLNESS  8
HNB3204  NURSING THEORY 8: (ELECTIVE) CHILD ADOLESCENT & FAMILY  8
HNB3201  NURSING THEORY 8: (ELECTIVE): HEALTH & ILLNESS IN OLDER ADULTS  8

Clinical Practicum 8: Electives (Choose one)
HNB3252  CLINICAL PRACTICUM 8: (ELECTIVE) ACUTE CARE  16
HNB3230  CLINICAL PRACTICUM 8: (ELECTIVE): MENTAL HEALTH & ILLNESS  16
HNB3248  CLINICAL PRACTICUM 8: (ELECTIVE): CHILD, ADOLESCENT & FAMILY  16
HNB3249  CLINICAL PRACTICUM 8 (ELECTIVE): HEALTH & ILLNESS IN OLDER ADULTS  16

Consolidation
HNB3250  CLINICAL PRACTICUM 9: CONSOLIDATION  16

Bachelor of Nursing (Honours)
Course Code: HHNO

Campus: St Albans

Course Objectives: The overall aim of the course is to provide nurses/midwives with the opportunity to develop knowledge and skills appropriate to Honours degree level of study to undertake a method of enquiry to investigate a clinical problem or issue. The objectives of the course are to provide students with the skills to:

- critically analyse existing knowledge about nursing/midwifery;
- develop a plan to address their research question;
- perform their investigation in an ethical manner;
- analyse data related to the research question; and
- present findings in relation to existing knowledge in a scientific way.

Career Opportunities: Completion of the course will prepare successful graduates for higher degree research studies and/or research in the clinical setting.

Course Duration: 1.5 years

Admission Requirements: To qualify for admission to the course applicants must:

- have satisfactorily completed a bachelor degree in nursing/midwifery with a grade average of Credit (C) or higher throughout the course; or
- have satisfactorily completed a one-year post-registration degree in nursing/ midwifery with a grade average of Credit (C) or higher throughout the course.

For selection into all places, good academic achievement is essential. Most Honours places will be allocated to those with the highest academic results. However, some applicants will be selected on a wider range of factors, including appropriate involvement in nursing and midwifery related employment, and interest and enthusiasm in developing research mindedness. It is preferable that applicants provide supporting documentation from their current employer, indicating employer endorsement for their study.

Course Structure: Students are required to study two specified subjects and to complete a minor thesis. The two subjects are to be completed within two semesters of part-time study. The minor thesis can be completed on a full-time (one semester) or part-time (two semesters) schedule. Part-time students will need to complete the course of study in 24 months.

In order to be awarded a Bachelor of Health Science (Honours) - Nursing students must complete all subjects with Honours H3 or above.

Year 1, Semester 2
HNH4210  EXAMINING PRACTICE  24
Year 1, Semester 1
HNH4110  HONOURS THESIS PREPARATION  24
Year 2, Semester 2
HNH4211  MINOR THESIS A (PART TIME)  24
OR
HNH4213  MINOR THESIS C (FULL TIME)  48
Year 2, Semester 1
HNH4112  MINOR THESIS B (PART TIME)  24
Total Credit Points = 96

Master of Nursing (By Research)
Course Code: HRNR

Campus: Werribee, City Flinders, Sunbury

Course Objectives: The Master of Nursing (by Research) is offered to students who have demonstrated the ability to undertake extensive study and research in a focused area of nursing. Although expected to demonstrate a high degree of independence, the student works under the guidance of a qualified and experienced supervisor. While the successful completion of this qualification depends entirely upon the examination of the thesis, the School of Nursing also places great emphasis on the development of research skills and background knowledge deemed necessary for successful completion of the research project.

Areas of Specialisation

Staff within the School will supervise research in a number of areas of specialisation including:

- acute care nursing;
- community health nursing;
- mental health;
- midwifery;
- neuroscience nursing;
- nursing education;
- nursing theory and clinical practice;
- ontology and epistemology of caring;
- professional nursing issues;
- substance abuse;
- women’s health.

These areas of study are not exhaustive and applicants are advised to contact the School directly to discuss their proposed area of study.

Course Duration: To be advised.
Admission Requirements: To qualify for admission to the Master of Nursing applicants must hold an undergraduate degree in nursing or equivalent.

Some students may be required to undertake additional studies in specific areas, for example advanced research subjects.

Degree Requirements

In order to be awarded the Master in Nursing (by Research) students must undertake an appropriate research design subject, or any other subject, as required by the School; have their candidature approved by the Faculty; and successfully complete a thesis undertaken with appropriate supervision.

Course Structure: Completion of the Master of Nursing (by Research) normally requires two years of full-time study or part-time equivalent.

- HNM6800 RESEARCH THESIS (FULL-TIME) 48
- HNM6801 RESEARCH THESIS (PART-TIME) 24

Locations: St Albans,

Pre-requisites: Nil

Descriptions: The minor thesis is intended to provide students with an opportunity to undertake independent inquiry into an area of personal interest and applicable to their professional development. The thesis will be a research paper of not less than 15,000 words and not more than 20,000 words. It will report on independently-conducted original research, which demonstrates the student’s ability to clearly define a research question and to undertake a critical review of the relevant literature. Data selection, collection and analysis skills should also be demonstrated. The thesis should allow the candidate to utilise a methodology applicable to a research question. It is expected that the student will attend sessions on quantitative or qualitative research methods depending on the approach they intend to use in their approach to the topic chosen. It is intended that the topic chosen for investigation will be in consultation with a supervisor approved by the School who will oversee the conduct of the research.

Credit Points: 48

Learning Outcomes: On successful completion of this unit, students should be able to:

- Independently conduct research that demonstrates the ability to define a problem, undertake a detailed literature search and review the relevant theoretical and practical implications on the topic area;
- Develop a research design and methodology and apply it to an appropriate pure or applied problem;
- Develop a set of research questions, and perform scholarly research tasks;
- Develop data collection tools including collection strategies and analysis skills;
- Develop a scholarly written thesis that demonstrates high levels of analytical and written communication skills.

Class Contact: The Minor Thesis unit is available in either full-time or part-time mode and is conducted over one or two semesters respectively. Appropriate consultation time with the supervisor must be negotiated prior to the commencement of the semester and a learning contract that includes aims and objectives and time frame of the research project will be negotiated with each student.


Assessment: One written thesis (100%). The format and word count will depend on both the discipline and the subject matter. The scope of the research project should reflect the current Faculty guidelines and the word limit should not exceed 20,000 words. The thesis will be graded independently by two examiners and assessment will comply with Faculty requirements for marking postgraduate theses.
SUBJECTS
Below are subject details for courses offered by the School of Nursing and Midwifery in 2010. IMPORTANT NOTICE: Not all elective subjects for courses offered by the school are listed below. There are numerous elective possibilities that the school can choose to offer and those selected will vary from year to year. Details of these electives will be advised by the school.

HHA6116 MINOR THESIS (PART TIME)
Locations: St Albans,
Pre-requisites: Nil
Descriptions: The minor thesis is intended to provide students with an opportunity to undertake independent inquiry into an area of personal interest and applicable to their professional development. The thesis will be a research paper of not less than 15,000 words and not more than 20,000 words. It will report on an independently-conducted and original research, which demonstrates the student’s ability to clearly define a research question and to undertake a critical review of the relevant literature. Data selection, collection and analysis skills should also be demonstrated. The thesis should allow the candidate to utilise a methodology applicable to a research question. It is expected that the student will attend sessions on quantitative or qualitative research methods depending on the approach they intend to use in their approach to the topic chosen. It is intended that the topic chosen for investigation will be in consultation with a supervisor approved by the School who will oversee the conduct of the research.
Credit Points: 24
Learning Outcomes: On successful completion of this unit, students should be able to:
• Independently conduct research that demonstrates the ability to define a problem, undertake a detailed literature search and review the relevant theoretical and practical implications on the topic area;
• Develop a research design and methodology and apply it to an appropriate pure or applied problem;
• Develop a set of research questions, and perform scholarly research tasks;
• Develop data collection tools including collection strategies and analysis skills;
• Develop a scholarly written thesis that demonstrates high levels of analytical and written communication skills.
Class Contact: A total of 36 hours or equivalent for one semester comprising lectures and tutorials.
Assessment: One written proposal related to the field of study/professional practice. The proposal must include a comprehensive review of the literature, a description of the research process(es), a justification of the proposed research, budget costing and timeframe for the research (5000 words) (100%).

HNB1101 FRAMEWORKS FOR NURSING PRACTICE
Locations: St Albans,
Pre-requisites: Nil
Descriptions: This unit comprises three parts. Part 1 (3 weeks) enables students to explore portrayals of nursing in the media and to consider these critically in relation to their personal perceptions of nursing. Part 2 (8 weeks) introduces them to broad frameworks which shape the scope and dimensions of nursing practice. These include population health/herth promotion considered within the National Health Priorities; professional practice (ethics, law and regulatory frameworks); critical thinking and analysis (use of evidence in practice); frameworks for patient/client assessment of care; quality use of medicine and therapeutic relationships. Part 3 (1 week) introduces students to issues surrounding the development of a professional practice portfolio which they will develop further throughout their course of study.
Credit Points: 12
Learning Outcomes: On successful completion of this unit, students are expected to be able to:
• critically discuss portrayals of the nurse found in the media;
• discuss some of the ways in which National Health Priorities are being addressed through health promotion strategies;
The student will be expected to:

- discuss ethical and legal boundaries of nursing practice;
- discuss the role of the registered nurse in terms of regulatory frameworks for practice;
- discuss duty of care as it relates to nurses practice;
- discuss the use of evidence in nursing practice;
- demonstrate an understanding of the purpose of assessment frameworks for nursing practice;
- outline the principles underpinning the quality use of medicines;
- demonstrate beginning skills in professional communication, including an understanding of professional boundaries and self-awareness;
- complete a mathematics mastery test;
- demonstrate beginning skills in information literacy; and
- begin developing a personal professional practice portfolio.

Class Contact: Lectures: 2 hours per week Total = (24 hours) Tutorials: 2 hours per week Total = (24 hours) Laboratory sessions (computer) 1 hour per week Total = (24 hours) 


Assessment: Mathematics mastery test (30 minute test)

All students are required to achieve 100% in the mathematics mastery test. Any student not achieving 100% in this test will be required to undertake remedial work in mathematics skills. No. If all other assessments in this unit are passed final, the mathematic mastery test will not impede progress to the following nursing unit. Students will however need to continue with remediation until they successfully complete the mathematics mastery test.

Report Presentation report (500 words) 20% Students must achieve an aggregate score of 50% to pass this unit.

HNB1115 HEALTHCARE LAW AND ETHICS

Locations: St Albans,

Pre-requisites: Nil

Descriptions: This module introduces the student to core legal and ethical principles required for beginning professional practice within the Australian Health Care system and covers the following topics: Introduction to Australian Law, Working within the Law, Legal Concepts, Professional Regulation, The regulation of drugs, Life and Death Issues, Professional practice and the ethical perspective. Module 2 This module introduces the student to: The interrelations between Commonwealth, state and private sector roles in health care, Health insurance and the funding of health services including: Healthcare funding, DRGs and Casemix, Pressures on the Pharmaceutical Benefits Schemes, The organisation of Health care services, Reforms of the Health Service.

Credit Points: 8

Learning Outcomes: Module 1

The student will be expected to:

- Discuss legislation and common law relevant to professional practice;
- Discuss health law as an essential aspect of professional practice;
- Discuss the regulation of nursing in Australia with particular reference to Victorian statutory;
- Distinguish between civil and criminal law and discuss how each may apply to professional practice;
- Explain what must be shown to prove negligence in health care contexts;
- Discuss the legal requirements to maintain patient/client confidentiality;
- Reflect upon own values, attitudes and beliefs about nursing and compare these with the value statements in the Code of Ethics for Nurses in Australia (ANCI, 1993);
- Appreciate the importance of an ethical code of practice as foundational to practice;
- Apply ethical frameworks to issues that arise in professional practice;
- Understand the concept of personhood;
- Examine the moral arguments for maintaining or breaching confidentiality in professional practice;
- Discuss meaning/s of the concept of advocacy as this is presented in professional practice; and
- Explore the differences and similarities of ethical and legal frameworks and implications of these frameworks on the nurses and midwives professional relationship with clients, their families and other health care providers.

Module 2

The student will be expected to:

- Show an understanding of the role of State and Federal governments within the Australian Health Care context;
- Discuss the significance for nursing care of public and private sector funding mechanisms for acutely ill patients;
- Discuss growing pressures on the Pharmaceutical Benefits Scheme and their implications for patient care; and
- Discuss Medical pluralism and how this may impact on patient care.

Class Contact: Equivalent of 40 hours


Assessment: Learning folio - 60%, oral presentation - 40%

HNB1201 WORKING WITH FAMILIES

Locations: St Albans,

Pre-requisites: Nil.

Descriptions: This unit provides students with an understanding of some of the major health needs of families living within the Western region of Melbourne. It introduces students to family and community nursing with particular emphasis on health issues across the lifespan related to cultural diversity, geographical dislocation and socio-economic disadvantage. It also explores ethical issues related to access to health care.

Credit Points: 12

Learning Outcomes: On successful completion of this unit, students are expected to be able to:

- identify major health needs of families living in the Western region of Melbourne and compare these to Victorian, National and global health priorities;
- discuss theories of family and community nursing;
- assemble a genogram of a family;
- apply professional, ethical, legal and cultural principles to communication with individual, family and community;
- identify key health issues for families in the Western region with particular emphasis on:
HNB1202 HEALTH PRIORITIES & NURSING 1

Locations: St Albans,

Pre-requisites: HNB1101 - FRAMEWORKS FOR NURSING PRACTICE

Descriptions: This unit introduces students to the National Health Priority, Injury Prevention and Control, and provides them with an opportunity to apply the knowledge learnt in their personal and professional lives. In the clinical laboratory, students learn the skills required to undertake a comprehensive health assessment, identify normal and abnormal findings and document these.

Credit Points: 12

Learning Outcomes: On successful completion of this unit, students are expected to be able to:

• discuss population approaches to injury prevention and control (i.e. policies, legislation and health promotion initiatives);
• identify key issues in injury prevention and control across the lifespan and in a variety of settings;
• demonstrate an awareness of skills to aid in developing and supporting self in relation to nursing practice;
• discuss a range of history taking and physical assessment tools and techniques used in Victorian health care settings;
• demonstrate beginning skills in history taking and physical assessment in the clinical laboratory;
• discuss consent, privacy, and confidentiality when dealing with patients/clients and their information;
• differentiate between the roles of the division 1 and division 2 registered nurse and patient services assistants/personal care attendants;
• discuss how clients cultural and family values can be met within the clinical environment;
• briefly explain health care funding, its relationship to the provision of care and actions nurses can take to utilise resources efficiently.

Class Contact: Lectures: 1-2 hours per week (total = 20 hours) Tutorials: 1-2 hours per week (total = 20 hours) Laboratory sessions: 1-2 hours per week (total = 12 hours) Total: 60 hours of class contact time Class contact hours per week may vary according to clinical placement allocation.


Assessment: Mathematics mastery test (30 minute exam) (hurdle) Week 6

All students are required to achieve 100% in the mathematics mastery test. Any student not passing this test will be required to undertake remedial work in mathematics skills and be retested. Successful completion of the mathematics mastery test is a requirement for progression into Health Priorities & Nursing 2 and Clinical Practicum 2.

Assignment Written assessment (1000 words) 35% Students must achieve an aggregate score of 50% to pass this unit. Students will normally be granted a supplementary assessment if they achieve a grade of 45 to 49%. Students must achieve at least 50% in the supplementary assessment to be granted a P 50% as a final grade for the unit.

HNB1203 CLINICAL PRACTICUM 1

Locations: St Albans,

Pre-requisites: HNB1101 - FRAMEWORKS FOR NURSING PRACTICE

Descriptions: This unit provides students with the opportunity to apply the knowledge learnt in Health Priorities & Nursing 1 in beginning professional practice. Students will undertake comprehensive health assessments, identifying normal and abnormal findings and documenting these. Students will focus on injury prevention and safety issues while undertaking their clinical placement. Students will also observe the roles of other members of the health care team and consider how the values of the family and culture are met within the care facility.

Credit Points: 12

Learning Outcomes: On successful completion of this unit, students are expected to be able to:

• identify their current scope of practice and work within this;
• demonstrate beginning skills in risk assessment;
• identify key issues in injury prevention in the clinical setting;
• discuss Occupational Health and Safety in relation to risk assessment and nursing practice and apply this in the clinical setting;
• discuss infection control principles and demonstrate these in the clinical setting;
• conduct a health assessment interview to obtain a health history and accurately record this using appropriate medical terminology;
• demonstrate beginning skills in mental status examination and taking a psychiatric history;
• demonstrate beginning physical assessment skills in the clinical setting;
• undertake functional health assessments appropriate to allocated patients and
be able to:

- critically appraise two journal articles using an appropriate appraisal tool;
- briefly describe qualitative and quantitative research methodologies;
- critically appraise two journal articles using an appropriate appraisal tool;
- identify barriers and facilitators to implementing evidence based practice.

Class Contact: 7 hours of medium fidelity simulation laboratories will be conducted during semester to complement the theory and laboratory hours in Health Priorities in Nursing 1 and 120 hours of clinical practice in clinical practicum.


Assessment: Laboratory Work Group activity sheet completion in two simulation laboratories 10% Students must achieve an aggregate score of 50% and pass the summative clinical appraisal and written clinical problem solving task to pass this unit. Students who do not pass the summative clinical appraisal will be permitted to undertake up to five additional clinical days until they reach the required standard. However, those unable to complete requirements to pass within the extended time frame will be given a fail grade.

Students who demonstrate unsafe practice will be removed from the clinical practicum. Depending upon the safety issue in question the student may be able to return to clinical practice following remediation. Otherwise a fail grade will be awarded. Students who do not achieve a pass in both mandatory components of assessment but who achieve an aggregate of 50% or greater will have a U (ungraded fail) grade awarded as their final result.

A Formative Clinical Appraisal (feedback) will be conducted at the end week 1

HNB2101 WORKING WITH EVIDENCE IN PRACTICE

Locations: St Albans,

Pre-requisites: Nil.

Descriptions: This unit aims to prepare students to be consumers of research using an evidence based practice approach. It introduces students to different research methodologies used in health care and assists them to develop critical appraisal skills.

Credit Points: 12

Learning Outcomes: On successful completion of this unit, students are expected to be able to:

- describe the origins and development of evidence based practice;
- identify the stages of evidence based nursing;
- frame a question in a structured and focussed manner;
- search for evidence using bibliographic data bases;
- briefly describe qualitative and quantitative research methodologies;
- critically appraise two journal articles using an appropriate appraisal tool;
- identify barriers and facilitators to implementing evidence based practice.

Class Contact: Lectures: 2 hours per week (total = 24 hours) Tutorials: 2 hours per week (total = 24 hours) Laboratory sessions: (computer) 1 hour per week (12 hours) Total: 60 hours of class contact time Class contact hours per week may vary according to clinical placement allocation.


Assessment: 1. Written assessment (1500 words) (50%) Week 6 2. Written assessment (1500 words) (50%) - Week 12 Students must achieve an aggregate score of 50% to pass this subject. Students will normally be granted a supplementary assessment if they achieve a grade of 45 to 49%. Students must achieve at least 50% in the supplementary assessment to be granted a P 50% as a final grade for the unit. Students who achieve a grade of 40 to 44% will be allocated L (not yet assessed) until after the supplementary exam period is over, when the grade will be converted to N (fail).

HNB2102 HEALTH PRIORITIES & NURSING 2

Locations: St Albans,

Pre-requisites: HNB2102 - HEALTH PRIORITIES & NURSING 1

Descriptions: This unit builds on previous nursing units of study and further develops the students knowledge of the National Health Priorities and complements Pathophysiology & Quality Use of Medicines 2. In particular students will study the nursing management of patients suffering from asthma, other respiratory disorders, cardiovascular disease and their related co-morbidities.

Credit Points: 12

Learning Outcomes: On successful completion of this unit, students are expected to be able to:

- discuss population approaches to identified national health priorities (i.e. policies, legislation, health ecology and health promotion initiatives);
- identify genetic and social determinants of health in relation to identified national health priorities;
- discuss holistic (gender, cultural and spiritual) assessment of individuals across the lifespan experiencing one or more of the conditions identified in the national health priorities;
- discuss burden of disease and health costs associated with identified national health priorities;
- demonstrate knowledge of the nursing management of individuals across the lifespan experiencing asthma, respiratory and cardiovascular diseases and related disease processes in various contexts of care using a problem solving approach;
- demonstrate knowledge of infection control and Occupational Health and Safety issues in the institutional, community and global context in relation to one or more of the conditions identified in the national health priorities;
- discuss communication theory, non-verbal communication and active listening;
- in the clinical laboratory demonstrate skills in the safe practice of medication management (including drug calculation, knowledge of medication used, medication orders etc.)

Class Contact: Lectures: 1-2 hours per week (total = 20 hours) Laboratory sessions: 1-2 hours per week (total = 20 hours) Simulation: 10 hours across the semester. Total: 50 hours of class contact time Class contact hours per week may vary according to clinical placement allocation.

Assessment: Hurdle requirement for clinical placement Week 4 Drug calculation

Students are not permitted to administer medications until they have passed this hurdle requirement. NB. Successful completion of the drug calculation mastery test is a requirement for progression into Clinical Practicum 3. Laboratory Work Group activity sheet completion in two simulation laboratories (5% each) Weeks 6 and 8. 10%. Students must achieve an aggregate score of 50% and pass the written examination to pass this subject. Students will normally be granted a supplementary assessment if they achieve a grade of 45 to 49%. Students must achieve at least 50% in the supplementary assessment to be granted a P 50% as a final grade for the unit. Students who achieve a grade of 40 to 44% will be allocated L (not yet assessed) until after the supplementary exam period is over, when the grade will be converted to N (fail). Students who do not achieve a pass in the written examination but who achieve an aggregate of 50% or greater will have a U (ungraded fail) grade awarded as their final result.

HNB2103 CLINICAL PRACTICUM 2

Locations: St Albans,

Pre-requisites: HNB1202 - HEALTH PRIORITIES & NURSING 1

Descriptions: This unit builds on previous nursing units of study and further develops the students' assessment and clinical decision making skills in the clinical environment. Students will apply their knowledge of pathophysiology, nursing interventions and the quality use of medicines to management of clients suffering from asthma, other respiratory diseases, cardiovascular disease and their related co-morbidities.

Credit Points: 12

Learning Outcomes: On successful completion of this unit, students are expected to be able to:

- identify their current scope of practice and work within this;
- demonstrate more advanced communication skills and interview techniques within the clinical setting; 
- demonstrate holistic (gender, cultural and spiritual) assessment of individuals across the lifespan experiencing one or more of the conditions identified in the national health priorities;
- demonstrate knowledge of the nursing management of individuals across the lifespan experiencing asthma, respiratory and cardiovascular disease and related disease processes in various contexts of care using a problem solving approach;
- apply the principles of infection control and Occupational Health and Safety in an institutional setting and in relation to one or more of the conditions identified in the national health priorities;
- assess, plan and implement the care for and evaluate the care of an increasing patient load within the student’s scope of practice and in consultation with the patient and the health care team;
- demonstrate skills in the safe practice of medication management (including drug calculation, knowledge of medication used, medication orders etc.);
- continue entering clinical achievements into their personal professional practice portfolio.

Class Contact: Nil. This is a clinical subject which aligns with the theory subject Health Priorities and Nursing 2


Assessment: Practicum Formative Clinical Appraisal (feedback) between day 8 and 11 of placement 0% Students must achieve an aggregate score of 50% and pass the summative clinical appraisal and written clinical problem solving task to pass this unit. Students who do not pass the summative clinical appraisal will be permitted to undertake up to five additional clinical days until they reach the required standard. However, those unable to complete requirements to pass within the extended time frame will be given a fail grade. Students who demonstrate unsafe practice will be removed from the clinical practicum. Depending upon the safety issue in question the student may be able to return to clinical practicum following remediation. Otherwise a fail grade will be awarded. Students who do not achieve a pass in both mandatory components of assessment but who achieve an aggregate of 50% or greater will have a U (ungraded fail) grade awarded as their final result.

HNB2138 NURSING THEORY 3 HEALTH & ILLNESS IN OLDER ADULTS

Locations: St Albans,

Pre-requisites: HNB 1232 Nursing Theory 1: Acute Care

Descriptions: Risk assessment and safety of physical and mental health: includes issues relating to loss and grief, sensory changes, musculoskeletal changes and falls;

Credit Points: 8

Learning Outcomes: Recognise the factors involved in promoting and maintaining the physical and mental health and safety of older adults and to be able to identify those at risk; Describe and discuss nursing strategies that are supportive of the physical and mental health needs of older people living in the community, within residential care facilities or an admission to acute or rehabilitative care venues;

Class Contact: Equivalent of 40 hours.


Assessment: Essay (2500 words.) 60%Individual portfolio 40%

HNB2202 HEALTH PRIORITIES & NURSING 3

Locations: St Albans,

Pre-requisites: HNB2102 - HEALTH PRIORITIES & NURSING 2

Descriptions: This unit introduces students to the National Health Priority, Mental Health and Wellbeing and builds on the communications and assessment skills developed in previous units. It aims to develop students knowledge, skills and attitudes in the promotion of mental health. The unit provides the skills students require to meet the needs of people with altered mental health status in institutional and community settings. It also complements the information provided in Pathophysiology & Quality Use of Medicines 2.

Credit Points: 12

Learning Outcomes: On successful completion of this unit, students are expected to be able to:

- discuss mental health and illness throughout the lifespan including the social and genetic determinants of mental illness;
- briefly explain the structure, function and policy issues of Victoria’s Psychiatric Services;
- describe the theoretical bases of mental health nursing;
- briefly explain the use of the Diagnostic and Statistical Manual of Mental Disorders IV-TR (DSM IV-TR) and International Classification of Diseases (10th Ed) (ICD-10);
- demonstrate knowledge of the legislative and ethical foundations of mental health care and treatment, in particular the roles and responsibilities of the nurse under the Victorian Mental Health Act;
- discuss the use of a problem solving approach as a framework to guide practice in mental health settings;
• describe the clinical manifestations of common psychiatric disorders;
• demonstrate beginning health assessment knowledge and skills in psychosocial assessment and mental status examination;
• demonstrate the ability to plan, implement and evaluate mental health nursing care for individuals and families in simulated scenarios;
• discuss common therapeutic modalities, including psychopharmacology;
• demonstrate beginning psychotherapeutic communication skills in mental health nursing, including the use of Ivey’s 5 stage interview in clinical skills laboratories; and
• discuss the principles of mental health risk assessment and crisis intervention.

Class Contact: Lectures: 1-2 hours per week (total = 20 hours) Laboratory sessions: 1-2 hours per week (total = 20 hours) Simulation: 10 hours across the semester Total: 50 hours of class contact time Class contact hours per week may vary according to clinical placement allocation.


Assessment: Hurdle requirement for clinical placement in Clinical Practicum 3 - Week 1 or 2. Drug calculation mastery test (100% needed for pass) Students are not permitted to administer medications until they have passed this hurdle requirement. Assignment Written assessment (1000 words) Week 6 35% To gain an overall pass in this unit students must achieve an aggregate score of 50% and pass the written examination. Students will normally be granted a supplementary assessment if they achieve a grade of 45 to 49%. Students must achieve at least 50% in the supplementary assessment to be granted a P 50% as a final grade for the unit. Students who achieve a grade of 40 to 44% will be allocated L (not yet assessed) until after the supplementary exam period is over, when the grade will be converted to N (fail). Students who do not achieve a pass in the mandatory component of assessment but who achieve an aggregate of 50% or greater will have a U (ungraded fail) grade awarded as their final result.

HNB2203 CLINICAL PRACTICUM 3

Locations: St Albans,
Pre-requisites: HNB2102 - HEALTH PRIORITIES & NURSING 2
Descriptions: The aim of this unit is to provide students with the opportunity to apply the mental health knowledge and skills developed in Pathophysiology and Quality Use of Medicines 2 and Health Priorities and Nursing 3 in an institutional and/or community setting.
Credit Points: 12
Learning Outcomes: On successful completion of this unit, students are expected to be able to:
• identify their current scope of practice and work within this;
• utilise a problem solving approach as a framework to guide practice in mental health settings;
• demonstrate knowledge of the legislative and ethical foundations of mental health care and treatment, in particular the roles and responsibilities of the nurse under the Victorian Mental Health Act;
• describe the clinical manifestations of common psychiatric disorders;
• demonstrate beginning health assessment knowledge and skills in psychosocial assessment and mental status examination;
• demonstrate the ability to plan, implement and evaluate mental health nursing care for individuals and families in consultation with the nursing team;
• discuss common therapeutic modalities, including psychopharmacology;
• demonstrate skills in the safe practice of medication management (including drug calculation, knowledge of medication used, medication orders etc.);
• demonstrate beginning psychotherapeutic communication skills in mental health nursing, including the use of Ivey’s 5 stage interview;
• demonstrate beginning assessment skills in mental health risk assessment and crisis intervention;
• demonstrate culturally appropriate assessment and intervention strategies;
• continue entering clinical achievements into their personal professional practice portfolio.

Class Contact: Nil. This is a clinical subject which aligns with the theory subject Health Priorities and Nursing 3.


Assessment: Practicum Formative Clinical Appraisal (feedback) between day 8 to 11 of placement 0% To gain an overall pass in this unit students achieve an aggregate score of 50% and gain a pass in both the summative appraisal and the written problem solving task. Students will normally be granted a supplementary assessment if they achieve a grade of 45 to 49%. Students must achieve at least 50% in the supplementary assessment to be granted a P 50% as a final grade for the unit. Students who achieve a grade of 40 to 44% will be allocated L (not yet assessed) until after the supplementary exam period is over, when the grade will be converted to N (fail). Students who do not achieve a pass in both mandatory components of assessment but who achieve an aggregate of 50% or greater will have a U (ungraded fail) grade awarded as their final result.

HNB2204 HEALTH PRIORITIES & NURSING 4

Locations: St Albans,
Pre-requisites: HNB2102 - HEALTH PRIORITIES & NURSING 2
Descriptions: This unit builds on previous nursing units of study and further develops the students knowledge of the National Health Priorities. In particular students will be introduced to the nursing management of patients suffering from diabetes mellitus, cancer, arthritis and musculoskeletal conditions and related co-morbidities.
Credit Points: 12
Learning Outcomes: On successful completion of this unit, students are expected to be able to:
• demonstrate consolidation of knowledge specific to the identified national health priorities through the completion of Problem Based Learning scenario(s);
• analyse the role of the nurse in relation to emerging knowledge of genetics in relation to identified national health priorities;
• demonstrate holistic (gender, cultural and spiritual) assessment of individuals across the lifespan experiencing one or more of the conditions identified in the national health priorities using a Problem Based Learning approach;
• critically appraise the evidence base for the nursing management of individuals across the lifespan experiencing one or more of the conditions identified in the national health priorities;
• demonstrate further development of communication skills and interview techniques.
Class Contact: Lectures: 2-3 hours per week (total = 24 hours) Tutorials: 1-2 hour per week (total = 12 hours) Laboratory sessions: 2 hours per week (24 hours) Total: 60 hours of class contact time Class contact hours may vary according to clinical placement allocation.


Assessment: Assignment Written assessment (1000 words) Week 5 30% Students must achieve an aggregate score of 50% and pass the written examination to pass this subject. Students will normally be granted a supplementary assessment if they achieve a grade of 45 to 49%. Students must achieve at least 50% in the supplementary assessment to be granted a P 50% as a final grade for the unit. Students who achieve a grade of 40 to 44% will be allocated L (not yet assessed) until after the supplementary exam period is over, when the grade will be converted to N (fail). Students who do not achieve a pass in the written examination but who achieve an aggregate of 50% or greater will have a U (ungraded fail) grade awarded as their final result.

HNB2227 NURSING THEORY 5: MENTAL HEALTH AND ILLNESS B

Locations: St Albans,
Pre-requisites: HNB2127 - NURSING THEORY 5: MENTAL HEALTH AND ILLNESS A

Descriptions: The aims of this unit are to further develop students knowledge, skills and attributes gained in the first semester subject HNB2127 in the promotion of mental health and to meet the needs of people with altered mental health status in in-patient and community settings. To provide culturally appropriate care to individuals from various cultural groups, including Aboriginal and Torres Strait Islanders.

Credit Points: 8

Learning Outcomes: On successful completion of this unit students are expected to be able to:

- Develop further skills in caring for consumers who are receiving treatment and care for their mental illness;
- Explore the clinical manifestations of psychiatric disorders such as personality, eating, substance related and cognitive disorders;
- Further develop skills in mental status examination;
- Develop beginning assessment skills in risk assessment and crisis intervention;
- Develop the requisite knowledge to plan, implement and evaluate mental health care for individuals and families;
- Discuss common therapeutic modalities, including psychopharmacology, group and family therapy and motivational interviewing;
- Develop culturally appropriate skills in assessment and intervention for individuals from various cultural groups including Aboriginal and Torres Strait Islanders;
- Explore contemporary research relevant to mental health and illness nursing.

Class Contact: Lectures 24 hours (3 hours per week) Tutorials 16 hours (2 hours per week)


Assessment: Examination One 3 hour Examination. 60% In order to pass the unit students must attend at least 6 out of the 8 tutorials.

HNB2239 CLINICAL PRACTICUM 5 MENTAL HEALTH & ILLNESS

Locations: St Albans,
Pre-requisites: APT 1311 Psychology Across the Lifespan

Descriptions: Students will be provided with opportunities to practice a range of mental health nursing skills, including:

- Conduct psychosocial health assessment and mental status assessment and interviewing;
- Utilise a range of therapeutic communication techniques;
- Observe therapeutic modalities;
- Develop nursing care plans for persons with mental health disorders, including anxiety disorders, depression, schizophrenia, bi-polar, eating, substance use, personality disorders;
- Utilise reflective skills to evaluate nursing practice;
- Provide care to clients with psychiatric disorders, including bi-polar, eating, substance use, and personality;
- Provide care to clients with psychiatric disorders of older age, including dementia and confusion;
- Provide care to clients who are suicidal and engage in self-harm;
- Develop beginning skills in risk assessment and crisis intervention;
- Assist in pharmacological interventions, including anti manic and antidepressants;
- Engage clients in medication education; and
- Culturally appropriate assessment and interventions including indigenous Australians.

Credit Points: 16

Learning Outcomes: On successful completion of this unit, students are expected to be able to:

- Demonstrate the application of knowledge acquired through related theoretical and skills based subjects;
- Adapt knowledge of health assessment procedures to the individualised care requirements of clients in appropriate care settings;
- Perform safe and competent nursing care in accordance with the ANC competencies (2000) and Australian and New Zealand College of Mental Health Nurses Inc. Standards of Practice for Mental Health Nursing, and consistent with level of knowledge expected at this stage of the bachelor of nursing;
- Develop individualised nursing care plans for clients acknowledging physical/ mental condition, communication skills, socio-cultural or indigenous background and developmental stage;
• Apply the principles of occupational health and safety and infection control to all aspects of health care delivery;
• Apply knowledge of communication skills to all aspects of the clinical experience, and demonstrate appropriate interpersonal skills with clients, families, and healthcare personnel;
• Demonstrate knowledge of pharmacological agents such as route of administration, distribution, metabolism, common side effects and excretion;
• Apply legal and ethical principles to the holistic health care requirements of clients;
• Participate in reflective practice process through documentation, discussion and self-evaluation of learning experiences both on campus and in the clinical setting and the relationship between these experiences;
• Critically apply relevant theoretical concepts from related areas of study in the analysis of nursing situations; and;
• Participate in client education and provide information regarding the availability of community resources for persons requiring assistance on discharge or transfer.

Class Contact: Equivalent of 140 hours


Assessment: In order to be awarded a satisfactory grade for this unit, the student must successfully complete each of the following: - Demonstrate safe and competent practice in line with the ANCI Competencies and Australian and New Zealand College of Mental Health Nurses Inc. Standards of Practice for Mental Health Nursing, as defined for a student at this stage of the course; and - Demonstrate competency in conducting a Mental Health Status Examination. Final assessment: Satisfactory / Unsatisfactory Practicum Completed clinical appraisal tool Pass/Fail

HNB3100 PHARMACOLOGY IN NURSING PRACTICE

Locations: St Albans,

Pre-requisites: RBM2541 - HUMAN BIOSCIENCE 3 PATHOPHYSIOLOGY AND RBM2238 NURSING THEORY 5: MENTAL HEALTH & ILLNESS

Descriptions: The aim of this unit of study is to build upon the previously introduced general principles of pharmacology as they relate to nursing. The unit of study aims to assist students to attain an advanced level of knowledge of the pharmacological management of complex health problems that an individual may experience, and as such addresses: Pharmacology in the professional context sociocultural aspects, legal and ethical issues Professional responsibilities - clinical decision making in drug therapy, medication errors and management of adverse drug reactions Pharmacokinetic factors that modify drug action Changes in response to medications across the lifespan Polypharmacy and clinical overdose Drugs affecting the: peripheral nervous system, central nervous system, heart and vascular system, kidney and urinary system, respiratory system, gastrointestinal system, special senses, endocrine system, reproductive system, proliferation of microorganisms and body defences Nutritional and natural therapies

Credit Points: 8

Learning Outcomes: Students will be expected to:
• Apply the general principles of pharmacology to the professional context of nursing practice;
• Apply the general principles of pharmacology to the responsibilities of nursing practice;
• Explain the pharmacokinetics factors involved in the modification of drug action;
• Predict the changes in response to medications across the lifespan Identify significant relationships of polypharmacy and clinical overdose;
• Discuss the relationship between individuals presenting with peripheral nervous system, central nervous system, heart and vascular system, kidney and urinary system, respiratory system, gastrointestinal system, special senses, endocrine system, reproductive system, microorganisms or body defences conditions and the drugs which modify or reverse these the pathophysiological responses of these conditions;
• Discuss the relationship of conventional drug therapy to nutritional and complementary therapies in the care of individuals.

Class Contact: Lectures - 24 hours Tutorials - 16 hours Total - 40 hours


Assessment: Written critique of drug therapy in nursing practice (3000 words) 80% Drug Calculation Test 20%

HNB3101 RESEARCH FOR PRACTICE

Locations: St Albans,

Pre-requisites: Nil

Descriptions: Significance of research in nursing:
• Links between nursing education, theory and practice;
• Approaches to research process: qualitative and quantitative designs including mixed and triangulation methods;
• Classification and characteristics of exploratory, descriptive and explanatory studies;
• Steps in the research process: identification of problem statement, literature review, theoretical framework, sampling, data collection and analysis using descriptive and inferential statistics;
• Ethics and research;
• Disseminating and applying nursing research;
• Evaluate research reports and appraise a systematic review of the literature;
• Basic statistics for appraisal of systematic reviews, including statistical significance, chance, probability, confidence intervals, odds ratios, numbers needed to treat and pitfalls in analysis; and
• How to appraise the professional application of a systematic review and meta analysis to an aspect of professional practice.

Credit Points: 8

Learning Outcomes: At the completion of this subject, the students should be able to:
• Understand the research process in relation to nursing practice;
• Critically examine the relationship between nursing research and improvement in health care outcomes;
• Develop an understanding of research designs and methodologies;
• Critically evaluate a piece of nursing research;
• Understand the ethical implications of research;
• Develop a beginning knowledge in research proposal relevant to clinical practice;
• Be able to access and appraise research papers and systematic reviews;
• Develop the ability to appraise a systematic review of the literature on an aspect of clinical practice; and
• Understand how to utilise research to inform clinical practice.

Class Contact: Equivalent of 40 hours

Assessment: Assignment (2000 words)- 50%, two hour examination - 50%.

HNB3105 NURSING THEORY 7 - ACUTE CARE

Locations: St Albans,

Pre-requisites: HNB2233 NURSING PRACTICE 4: ACUTE CARE; RBM2233 HUMAN BIOSCIENCE 3: PATHOPHYSIOLOGY

Descriptions: The content of this subject will be organised around health breakdown, which causes significant dysfunction in several Functional Health Patterns:

- The role of the Division 1 Registered Nurse as co-ordinator of patient care;
- Models of co-ordinated care used in Australia;
- Clinical pathways;
- Critique of Patterns of Care;
- Multi-disciplinary communication and co-ordination skills;
- (Holistic care);
- The effect cultural or indigenous background may have on the care needed/provided;
- The role and function of Hospital in the Home programs;
- The role of care co-ordinators; and
- Care of patients with complex health breakdown, including HIV/AIDS, shock and multi system failure, adult respiratory distress syndrome, chronic renal failure, burns, cancer.

Credit Points: 8

Learning Outcomes: On completion of this unit, students should be able to:

- Show an understanding of the role of the Division 1 Registered Nurse as co-ordinator of patient care;
- Discuss the patient/client groups who need complex or co-ordinated care;
- Understand the care of patients with complex health breakdown;
- Discuss how this may need to be modified for various cultural and indigenous groups;
- Articulate the type of care needed by this patient/client group;
- Develop care pathways for this patient/client group;
- Discuss the models of co-ordinated care that are used in Australia;
- Understand multi-disciplinary communication and co-ordination skills;
- Describe the role and function of Hospital in the Home programs;
- Describe the role of care co-ordinators; and
- Utilise a self-directed approach to learning and professional development.

Class Contact: Equivalent of 40 hours


Assessment: Written critique paper (2000 words) - 50%, scenario based clinical decision-making exercise - 50%.

HNB3107 HEALTH & ILLNESS IN THE COMMUNITY

Locations: St Albans,
Pre-requisites: Nil.

Descriptions: Frameworks, for understanding general and psychiatric community nursing in the 21st century. The psycho-social determinants of health - understanding the mechanisms; Epidemiological data - revisiting the psycho-social determinants of health;

Credit Points: 8

Learning Outcomes: On successful completion of this unit, students are expected to be able to:

• Describe the scope of community nursing in Australia in relation to general and psychiatric nursing;
• Describe the changes in and causes of, the major physical and mental health problems in cosmopolitan and non-cosmopolitan populations over the past 200 years, including Australia’s Aboriginal populations;
• Discuss the significance of social, cultural, structural and environmental factors in determining physical and mental health outcomes in the early 21st Century.

Class Contact: Equivalent of 40 hours.


Assessment: Examination 2 hour examination 50%

HNB3108 NURSING THEORY 6 CHILD ADOLESCENT & FAMILY

Locations: St Albans,
Pre-requisites: RBM2517 - HUMAN BIOSCIENCE 3
HNB2233 NURSING THEORY 4: ACUTE CARE
HNB2238 NURSING THEORY 5: MENTAL HEALTH & ILLNESS

Descriptions: The content of this subject will reflect the following:

• Family centred care and the effects of hospitalisation on the child;
• The effect of different cultural, indigenous and ethnic backgrounds on the care and role of children and adolescents within the family and health care setting;
• Growth and developmental stages of the child from infancy to adolescence;
• Prevention and early intervention of sexually transmitted diseases (excluding HIV/AIDS);

• Episodic illnesses and life events including the planning, implementing and evaluation of care used to treat clients with a variety of medical and surgical conditions, including diabetes and planned and unplanned pregnancy;
• Medication issues in relation to child and adolescent nursing;
• Infectious childhood diseases and their impact on the child’s health, including immunization programs available to various cultural and indigenous groups;
• Basic life support for children;
• Services available to assist adolescents work through individual health issues;
• The role of the nurse in child and adolescent nursing in relation to mandatory reporting requirements;
• Mental health issues of the older child and adolescent, including homelessness, abuse (physical, psychological, sexual), eating disorders, and the early onset of other mental health disorders;
• Suicide, self-harm, substance abuse prevention and intervention in cultural groups including indigenous Australians; and
• Family assessment.

Credit Points: 8

Learning Outcomes: On completion of this subject, students should be able to:

• Apply relevant knowledge of bioscience and developmental psychology to the growth and development of the child and adolescent;
• Apply relevant knowledge of bioscience and developmental psychology to common paediatric disorders;
• Demonstrate communication skills required in providing care and support for children/adolescents and their families;
• Select appropriate strategies and interventions which assist in the reduction of stress and anxiety for the child/adolescent;
• Examine how the family’s structure and pattern of functioning affects the health of family members;
• Explore the cultural and socio-political rights of children and adolescents and their implications for nursing practice;
• State the data specifically pertinent to assessment of infants, children and adolescents;
• Apply a problem-solving approach to meet the needs of children/adolescents and their families during hospitalisation;
• Identify the adaptations that may need to be made to the care of children/adolescents who are from diverse cultural, indigenous and ethnic backgrounds; and
• Understand the mental health issues of the older child and adolescent.

Class Contact: Equivalent of 40 hours


Assessment: Presentation and written summary 40% Field work and written assignment 60%

HNB3109 CLINICAL PRACTICUM 7: COORDINATED CARE

Locations: St Albans,
Pre-requisites: HNB2241 - NURSING THEORY 4 ACUTE CARE

Descriptions: This practicum will allow students to participate in the care and co-ordination of patients with complex health problems. The focus will be on the
further development of the professional nurse’s role as a member of the health care team. The students will be expected to apply advanced theoretical principles and clinical skills to a number of conditions as outlined in HNB3105 (theory component). It is anticipated the students will build on previous Acute Care units (HNB2134 and HNB2234) and the linked theory units in the integration and coordination of nursing care.

Credit Points: 16

Learning Outcomes: On completion of this subject, students should be able to:

- Discuss the common therapeutic modalities, including psychopharmacology, group and family therapy and motivational interviewing;
- Demonstrate the ability to plan, implement and evaluate the care of complex patients in case based scenarios;
- Demonstrate a culturally appropriate skills in assessment and intervention of individuals from various cultural groups including Aboriginal and Torres Strait Islanders;
- Discuss contemporary research relevant to mental health and illness nursing;
- Examine mental health prevention, early intervention, and promotion;
- Examine specialist mental health services;
- Demonstrate integration of communication skills and interview technique at a beginning practitioner level.

Class Contact: Lectures: 1-2 hours per week (total = 20 hours) Laboratory sessions: 1-2 hours per week (total = 20 hours) Simulation laboratories: 10 hours across the semester Total: 50 hours of class contact time Class contact hours per week may vary according to clinical placement allocation.


Assessment: Assignment Written assessment (1000 words) Week 8 35% Students must achieve an aggregate score of 50% and pass the written examination to pass this subject. Students will normally be granted a supplementary assessment if they achieve a grade of 45 to 49%. Students must achieve at least 50% in the supplementary assessment to be granted a P 50% as a final grade for the unit. Students who achieve a grade of 40 to 44% will be allocated L (not yet assessed) until after the supplementary exam period is over, when the grade will be converted to N (fail). Students who do not achieve a pass in the written examination but who achieve an aggregate of 50% or greater will have a U (ungraded fail) grade awarded as their final result.

HNB3118 NURSING AND COMPLEX CARE

Locations: St Albans,

Pre-requisites: HNB2202 · HEALTH PRIORITIES & NURSING 3

Descriptions: This unit integrates and builds upon the knowledge and skills gained in previous units of study. Students gain a deeper knowledge of health conditions of the health needs of the local community and other conditions not previously studied. Students also gain a greater understanding of the social-cultural aspects of the person and how these impact on their health and the illness experience. The unit seeks to facilitate individual and family management skills through the application of higher-level knowledge and skills in clinical decision making. This unit aims to promote the ability of students to influence decisions affecting care outcomes.

Credit Points: 12

Learning Outcomes: On successful completion of this unit, students are expected to be able to:

- Demonstrate consolidation of knowledge and clinical decision making through the completion of problem based learning packages;
- Discuss the legal and ethical issues surrounding refusal of treatment and end of life decisions;
- Demonstrate the ability to assess, plan, implement and evaluate the care of complex patients in case based scenarios;
- Demonstrate the ability to safely undertake complex interventions in the laboratory;
- Demonstrate skills in the safe practice of complex medication regimes (including drug calculation, knowledge of medication used, medication orders etc.) in the laboratory;
- demonstrate time management skills in the laboratory;
- demonstrate the ability to work as a member of a team collaboratively planning care for patients within the laboratory;
- demonstrate beginning delegation and supervision skills in the laboratory.

Class Contact: Lectures: 3 hours per week (total = 36 hours) Tutorials: 2 hours per week (total = 24 hours) Total: 60 hours of class contact time Class contact hours per week may vary according to clinical placement allocation.


Assessment: Hurdle requirement for clinical placement Week 1 Drug calculation mastery test (100% needed for pass) Students are not permitted to administer medications until they have passed this hurdle requirement. Assignment Written assessment (1000 words) Week 6 30% To gain an overall pass in this unit students must achieve an aggregate score of 50% and gain a pass in the written examination. Students will normally be granted a supplementary assessment if they achieve a grade of 45 to 49%. Students must achieve at least 50% in the supplementary assessment to be granted a P 50% as a final grade for the unit. Students who achieve a grade of 40 to 44% will be allocated L (not yet assessed) until after the supplementary exam period is over, when the grade will be converted to N (fail). Students who do not achieve a pass in the written examination but who achieve an aggregate of 50% or greater will have a U (ungraded fail) grade awarded as their final result.

HNB3119 CLINICAL PRACTICUM 4

Locations: St Alburns,

Pre-requisites: HNB2202 - HEALTH PRIORITIES & NURSING 3

Descriptions: This unit integrates and builds upon the knowledge and skills gained in previous units of study. Students apply the knowledge and skills gained in Nursing & Complex Care to the clinical setting specifically focussing on the health needs of the local community. Students also consider how the social-cultural aspects of clients in their care impact on their health and the illness experience. Students apply the higher-level knowledge and skills gained in Nursing & Complex Care in clinical decision making, enabling more independent decision making and skills to engage in collaborative practice in a range of contexts across the lifespan. This unit aims to promote the ability of students to influence decisions affecting care outcomes.

Credit Points: 12

Learning Outcomes: On successful completion of this unit, students are expected to be able to:
- identify their current scope of practice and work within this;
- discuss quality measures used to evaluate healthcare delivery performance;
- utilise communication strategies to enhance disciplinary and interdisciplinary teamwork;
- demonstrate problem solving, time management and decision-making strategies that support successful outcomes in patient care;
- demonstrate comprehensive risk management in patient care;
- demonstrate the ability to provide patient care in a changing health care environment;
- demonstrate effective presentation and report writing skills;
- demonstrate consolidation of knowledge and clinical decision making through discussion of patient care with preceptors/educators;
- demonstrate the ability to assess, plan and implement the care for and evaluate the care of complex patients;
- demonstrate the ability to safely undertake complex interventions;
- demonstrate skills in the safe practice of complex medication regimes (including drug calculation, knowledge of medication used, medication orders etc.);
- demonstrate time management skills;
- demonstrate the ability to work as a member of the multidisciplinary team collaboratively planning care for patients;
- demonstrate professional communication skills in interactions with patients, carers and health professionals
- continue entering clinical achievements into their personal professional practice portfolio.

Class Contact: Nil. This is a clinical subject which aligns with the theory subject Nursing and Complex Care.


Assessment: Practicum Formative Clinical Appraisal (feedback) between day 8 and 11 of placement 0% Students must achieve an aggregate score of 50% and pass the summative clinical appraisal and written clinical problem solving task to pass this unit. Students who do not pass the summative clinical appraisal will be permitted to undertake up to five additional clinical days until they reach the required standard. However, those unable to complete requirements to pass within the extended time frame will be given a fail grade. Students who demonstrate unsafe practice will be removed from the clinical practicum. Depending upon the safety issue in question the student may be able to return to clinical practicum following remediation. Otherwise a fail grade will be awarded. Students who do not achieve a pass in both mandatory components of assessment but who achieve an aggregate of 50% or greater will have a U (ungraded fail) grade awarded as their final result.
HNB3120 ISSUES IN PROFESSIONAL PRACTICE

Locations: St Albans,

Pre-requisites: HNB2202 - HEALTH PRIORITIES & NURSING 3

Descriptions: The aim of this unit is for students to further consider the concept of professional practice. Professional practice will be explored in the context of the healthcare system and with a practical insight into the processes of transition from student to beginning practitioner.

Credit Points: 12

Learning Outcomes: On successful completion of this unit, students are expected to be able to:

• determine best practice services in the health care industry;
• describe quality measures used to evaluate healthcare delivery performance;
• discern and utilise communication strategies to enhance disciplinary and interdisciplinary teamwork (including conflict resolution, and grievance procedures);
• compare leadership styles and determine how teamwork can be fostered to achieve an effective work and care environment;
• analyse critical pathways as a modality of patient care;
• examine problem solving, time management and decision-making strategies that support successful outcomes in patient care;
• explain comprehensive risk management in patient care;
• clearly identify the role of the Division 1 nurse;
• discuss employer expectations of the Division 1 nurse;
• discuss the realities of providing patient care in a dynamic and challenging health care environment;
• demonstrate effective presentation and report writing skills;
• finalise their Personal Professional practice portfolio including their reflective journal, record of in-service education, SDL, short courses, voluntary work, student reps, awards and appraisals;
• appraise their own self-wellness and psychological resilience.

Class Contact: Lectures: 1-2 hours per week (total = 20 hours) Tutorials: 1-2 hours per week (total = 20 hours) Simulation: 10 hours across the semester Total: 50 hours of class contact time Class contact hours may vary according to clinical placement allocation.


Assessment: 1. Written assessment plan (500 words) (15%) - Week 6 2. Written assessment (2000 words) (70%) - Week 12 3. Oral presentation on written assignment topic (10 minutes) (15%) - Weeks 9-12 To gain an overall pass in this unit students must achieve an aggregate score of 50%. Students will normally be granted a supplementary assessment if they achieve a grade of 45 to 49%. Students must achieve at least 50% in the supplementary assessment to be granted a P 50% as a final grade for the unit. Students who achieve a grade of 40 to 44% will be allocated L (not yet assessed) until after the supplementary exam period is over, when the grade will be converted to N (fail).

HNB3201 NURSING THEORY 8 (ELECTIVE): HEALTH & ILLNESS IN OLDER ADULTS

Locations: St Albans,

Pre-requisites: HNB2138 - NURSING THEORY 3 HEALTH & ILLNESS IN OLDER ADULTS

Descriptions: Current gerontological research; review of the physiological and psychosocial consequences of normal ageing; focus on health promotion/illness prevention; overview of major theories of ageing; complex clients: refinement of assessment skills including use of specific assessment tools; assessment and clinical decision making; includes assessment and management of pain and bowel function, assessment and promotion of urinary continence and the assessment and management of challenging behaviours in confused clients; and Review care frameworks: includes intra-agency transfers and discharge planning.

Credit Points: 8

Learning Outcomes: On successful completion of this unit, students are expected to be able to:

• outline and promote a positive view of aging;
• recognise the importance of health promotion strategies in the community;
• demonstrate an increased awareness of the aging process through examination and discussion of theoretical frameworks;
• differentiate between physiological changes associated with the normal aging process and pathology when addressing clients;
• identify and discuss the major psychological and pathophysiological changes potentially encountered by older people and the options for management;
• outline the frameworks of care that apply in the community and in sub-acute and residential care facilities including relevant policy and funding arrangements; and
• describe nursing workforce issues that impact on practice in aged care settings.

Class Contact: Equivalent of 40 hours


Assessment: Assignment Written assignment (2500 words) 60%
• Mental health policy;
• Family sensitive practice; and
• Social inclusion.

Credit Points: 8

Learning Outcomes: On successful completion of this unit, students are expected to be able to:

• Discuss the theoretical background and principles of cognitive behaviour therapy, group therapy, prevention and management of aggression, and case management;
• Discuss cognitive behaviour therapy, group therapy, prevention and management of aggression, and case management;
• Explore contemporary relevant research in cognitive behaviour therapy, group therapy, prevention and management of aggression, and case management;
• Discuss health policy and issues related to mental health service provision;
• Discuss family sensitive practice; and
• Discuss the concept of social inclusion.

Class Contact: Equivalent of 40 hours

Required Reading: Contemporary Psychiatric-Mental Health Nursing Kneisl, C. Trigoboff, E. 2004 1 Pearson Psychopharmacology for health professionals Usher, K., Foster, K, and Bullock, S 1 Elsevier

Assessment: Case Study Interview and assessment (1500 words). 40%

HNB3204 NURSING THEORY 8: (ELECTIVE) CHILD ADOLESCENT & FAMILY

Locations: St Albans,

Pre-requisites: HNB3108 - NURSING THEORY 6 CHILD ADOLESCENT & FAMILY

Descriptions:

• Review of principles of growth and development in relation to acute paediatric nursing, such as the sick child and adolescent in a variety of settings;
• Health promotion and societal concerns of childhood and adolescence such as AIDS, behaviour problems, sexual assault;
• The more common child and adolescent genetic and development disorders requiring short/long term nursing interventions/management;
• A variety of conditions including prevention strategies encountered in children and adolescents including childhood accidents and trauma, and sexually transmitted disease prevention; and
• Adapt aspects of the above to various cultural and indigenous groups.

Credit Points: 8

Learning Outcomes: On completion of this unit students are expected to be able to:

• Utilise the principles of growth and development when assessing the health or illnesses of sick children and adolescent;
• Apply selected interventions to promote health of the child and adolescent in a variety of settings;
• Select age and culturally appropriate interventions to promote healthy personal and social development of the child and adolescent including indigenous clients; and
• Develop an understanding of psychosocial alterations in the child and adolescent including behaviour problems.

Class Contact: Equivalent to 40 hours per semester


Assessment: Case Study Written (2000 words) 50%

HNB3205 NURSING SPECIFIC POPULATIONS

Locations: St Albans,

Pre-requisites: HNB3118 - NURSING AND COMPLEX CARE

Descriptions: In this unit students develop deeper and broader knowledge about health issues affecting one of the following populations:

• Mental health (mandatory for students undertaking major studies in mental health)
• Acute/critical care
• Child adolescent and family
• Care of older adults
• Generalist nursing practice.

Credit Points: 12

Learning Outcomes: On successful completion of this unit, students are expected to be able to:

• identify and solve complex clinical problems;
• demonstrate the ability to comprehensively assess, plan, implement and evaluate care in complex clinical simulations;
• demonstrate the ability to adjust care and priorities in changing situations;
• demonstrate professional communication skills in interactions during simulations;
• demonstrate delegation and supervision skills during clinical simulations;
• use research findings to support or improve current practice.

Students will also develop specific individualised learning objectives related to the specific population and student’s identified learning needs.

Class Contact: Lectures: 2 hours per week (total = 24 hours) Tutorials: 1 hour per week (total = 12 hours) Simulation: 1 hour per week (total = 12 hours) Total: 48 hours of class contact time Class contact hours per week may vary according to clinical placement allocation.


Assessment:
1. Hurdle requirement for clinical placement Week 1 Drug calculation mastery test (100% needed for pass) Students are not permitted to administer medications until they have passed this hurdle requirement. 2. Group activity sheet completion in two simulation laboratories (10% X 2=20%) Weeks 6 & 8 3. Written assessment plan (500 words) (20%) Week 4 4. Written assessment (2000 words) (60%) Week 10 To gain an overall pass in this unit students must achieve an aggregate score of 50%. Students will normally be granted a supplementary assessment if they achieve a grade of 45 to 49%. Students must achieve at least 50% in the supplementary assessment to be granted a P 50% as a final grade for
the unit. Students who achieve a grade of 40 to 44% will be allocated L (not yet assessed) until after the supplementary exam period is over, when the grade will be converted to N (fail).

HNB3206 CLINICAL PRACTICUM 5
Locations: St Albans,
Pre-requisites: HNB3118 - NURSING AND COMPLEX CARE
Descriptions: In this unit students apply the knowledge gained in Nursing Specific populations to their clinical practice in the same area:
• Mental health (mandatory for students undertaking major studies in mental health)
• Acute/critical care
• Child adolescent and family
• Care of older adults
• Generalist nursing practice.
Credit Points: 24
Learning Outcomes: On successful completion of this unit, students are expected to be able to:
• Identify their current scope of practice and work within this;
• Professionally identify and solve complex clinical problems;
• Demonstrate the ability to comprehensively assess, plan, implement and evaluate care for a patient load similar to that of a graduate nurse;
• Demonstrate the ability to adjust care and priorities in changing situations;
• Demonstrate professional communication skills in interactions with patients, significant others and health professionals;
• Demonstrate beginning delegation and supervision skills in the clinical environment;
• Use research findings to support or improve current practice.

Students will also develop specific individualised learning objectives related to the specific population and student’s identified learning needs.

Class Contact: This is a clinical subject which aligns with the theory subject Nursing Specific Populations and incorporates 15 hours of simulation laboratory work over the semester.

Required Reading:

Assessment: Laboratory Work Group activity sheet completion in two simulation laboratories Weeks 6 and 8 10% Students must achieve an aggregate score of 50% and pass the summative clinical appraisal and written clinical problem solving task to pass this unit. Students who do not pass the summative clinical appraisal will be permitted to undertake up to five additional clinical days until they reach the required standard. However, those unable to complete requirements to pass within the extended time frame will be given a fail grade. Students who demonstrate unsafe practice will be removed from the clinical practicum. Depending upon the safety issue in question the student may be able to return to clinical practicum following remediation. Otherwise a fail grade will be awarded. Students who do not achieve a pass in both mandatory components of assessment but who achieve an aggregate of 50% or greater will have a U (ungraded fail) grade awarded as their final result.

HNB3207 RURAL REMOTE MENTAL HEALTH NURSING PRACTICE
Locations: St Albans,
Pre-requisites: HNB2202 - HEALTH PRIORITIES & NURSING 3
Descriptions: The aim of this unit is to develop students knowledge, skills and attitudes in the provision of treatment care and support in rural and remote settings to individuals and their families experiencing mental illness. This unit assists students to develop the communications and assessment skills required to work in these locations.

Credit Points: 12
Learning Outcomes: On successful completion of this unit, students are expected to be able to:
• discuss state-wide and national approaches to the delivery of mental health services;
• identify genetic and social determinants of mental health in relation to rural and remote populations;
• identify resources available within rural and remote settings for the treatment, care and support of individuals experiencing mental illness, their families and the wider community;
• demonstrate holistic (gender, cultural and spiritual) assessment of individuals across the lifespan experiencing symptoms of mental illness;
• demonstrate familiarity with telepsychiatry and video conferencing techniques;
• discuss burden of disease related to mental illness in rural and remote communities;
• discuss the specific needs of individuals from culturally and linguistically diverse backgrounds, particularly Australian Indigenous persons;
• discuss the implications of working as a lone practitioner in rural and remote areas;
• demonstrate communication skills and interview techniques appropriate to rural and remote populations;
• demonstrate the application of assessment skills appropriate to rural and remote populations;
• continue to develop their personal professional practice portfolio.

Class Contact: Four one-day workshops throughout semester Total: 32 hours of class contact time


Assessment: 1. Written fieldwork proposal (750 words) (25%) Week 5 2. Written fieldwork report (2500 words) (75%) Week 12 To gain an overall pass in this unit students must achieve an aggregate score of 50% and pass the written examination. Students will normally be granted a supplementary assessment if they achieve a grade of 40 to 49%. Students must achieve at least 50% in the supplementary assessment to be granted a P 50% as a final grade for the unit. Students who achieve a grade of 40 to 44% will be allocated L (not yet assessed) until after the supplementary exam period is over, when the grade will be converted to N (fail). Students who do not achieve a pass in the mandatory component of assessment but who achieve an aggregate of 50 % or greater will have a U (ungraded fail) grade as their final result.
HNB3215 NURSING THEORY 8: MENTAL HEALTH NURSING

Locations: St Albans,

Pre-requisites: HNB2238 NURSING THEORY 5: MENTAL HEALTH & ILLNESS

Descriptions: Mental health across the lifespan; Related mental health and illness research; Cognitive behavioural therapy; Group therapy; Prevention and management of aggression; Case management; Mental health policy and Mental Health Act of Victoria 1986; Family sensitive practice; Social inclusion; Person with mental illness and co-existing physical illness, the homeless, prisoners, refugees and survivors of violence and abuse; Diagnostic systems including DSM-IV-TR and ICD 10; Communication and assessment skills; Skills required to effectively document consumer care; Psychotropic medication and the related roles of nurses, consumers and carers; Social inclusion and stigma; Cultural sensitivity; Self-help groups and Non-Government Organisations (NGOs).

Credit Points: 8

Learning Outcomes: On completion of this subject, students will be able to:
- Understand mental health across the lifespan; Discuss cognitive behaviour therapy, group and family therapy, prevention and management of aggression; Discuss the application and practice of case management within Australia; Discuss health policy and issues related to mental health service provision in Australia, in particular the Mental Health Act of Victoria 1986; Discuss the role of self-help groups and Non-Government Organisations (NGOs) in the provision of care; Discuss the importance of cultural sensitivity when planning and implementing care; Discuss family sensitive practice; Understand the concept of social inclusion and stigma; Understand the role of the consumer and consumer representative in mental health care; Discuss psychotropic medication in relation to the knowledge and skills in administration, including the related roles of nurses, consumers and carers; Understand the skills required to effectively document consumer care; Further development communication and assessment skills; Understand the diagnostic systems including DSM-IV-TR and ICD 10; Discuss special populations such as the person with mental illness and co-existing physical illness, the homeless, prisoners, refugees and survivors of violence and abuse.

Class Contact: Equivalent of 40 hours.


Assessment: Case management study, comprising: Interview and assessment (1500 words): 40%; Case management report (2500 words): 60%

HNB3216 CLINICAL PRACTICUM 8: MENTAL HEALTH NURSING

Locations: St Albans,

Pre-requisites: HNB2238 NURSING THEORY 5: MENTAL HEALTH & ILLNESS, HNB2239 CLINICAL PRACTICUM 5: MENTAL HEALTH & ILLNESS

Descriptions: Students will be provided with opportunities to practise a range of mental health nursing skills, including:
- Observing and participating in psychotherapeutic approaches to care, such as cognitive behaviour therapy, and group therapy;
- Observing, assisting and reflecting on the prevention of aggression;
- Observing and reflecting on the therapeutic management of aggression; Observing and participating in case management;
- Developing an understanding of mental health policy and issues related to mental health service provision;
- Exploring the role of self-help groups and Non-Government Organisations (NGOs) in the provision of care;
- Practising cultural sensitivity when planning and implementing care;
- Participating in family sensitive practice;
- Supporting the concept of social inclusion and stigma;
- Supporting the role of consumer representatives in mental health care;
- Administering psychotropic medication, as appropriate;
- Participating in discussion about the roles of nurses, consumers and carers regarding psychotropic medication;
- Reinforcing the skills required to effectively document consumer care;
- Further developing communication and assessment skills;

Credit Points: 32

Learning Outcomes: On successful completion of this unit, students are expected to be able to:
- Participate in psychotherapeutic approaches to care, such as cognitive behaviour therapy, and group therapy;
- Observe and assist in the prevention of aggression;
- Observe the therapeutic management of aggression;
- Reflect on his or her practices in the prevention and management of aggression;
- Participate in case management;
- Develop an understanding of mental health policy and issues related to mental health service provision;
- Explore the role of self-help groups and Non-Government Organisations (NGOs) in the provision of care;
- Practice cultural sensitivity when planning and implementing care;
- Participate in family sensitive practice;
- Discuss the role of the consumer in mental health care;
- Discuss the concept of social inclusion and stigma;
- Assess the role of the consumer and consumer representative in mental health care; Discuss psychotropic medication in relation to the knowledge and skills in administration, including the related roles of nurses, consumers and carers; Understand the skills required to effectively document consumer care;
- Further develop communication and assessment skills;

Class Contact: 280 hours of clinical experience.


Assessment: In order to be awarded a satisfactory grade for this Unit of study, the student must successfully complete each of the following: Demonstration of competence in skills in line with those required for a graduate nurse at beginning level, in line with the ANMC competencies (2005); Demonstrate safe and competent practice in line with the ANMC Competencies and Australian and New Zealand College of Mental Health Nurses Inc. Standards of Practice for Mental Health Nursing, as defined for a student at this stage of the course; and: Demonstrate competency in conducting a Mental Health Status Examination. Final assessment: Satisfactory / Unsatisfactory Practicum Clinical placement assessment tool Pass/Fail
HNB3230 CLINICAL PRACTICUM 8 (ELECTIVE): MENTAL HEALTH & ILLNESS

Locations: St Albans,

Pre-requisites: HNB3235 NURSING PRACTICE 5: MENTAL HEALTH & ILLNESS, HNB3236 CLINICAL PRACTICUM 5: MENTAL HEALTH & ILLNESS

Descriptions: Students will be provided with opportunities to practise a range of mental health nursing skills, including:

- Observing and participating in psychotherapeutic approaches to care, such as cognitive behaviour therapy, and group therapy;
- Observing and assisting in the prevention and therapeutic management of aggression;
- Observing and participating in case management;
- Reflecting on his or her practices in the prevention and management of aggression; and
- Developing an understanding of mental health policy and issues related to mental health service provision.

Credit Points: 16

Learning Outcomes: On successful completion of this unit, students are expected to be able to:

- Participate in psychotherapeutic approaches to care, such as cognitive behaviour therapy, and group therapy;
- Assist in the prevention and therapeutic management of aggression;
- Participate in case management;
- Reflect on his or her practices in the prevention and management of aggression; and
- Discuss mental health policy and issues related to mental health service provision.

Class Contact: 140 hours of clinical experience.


Assessment: In order to be awarded a satisfactory grade for this unit, the student must successfully complete each of the following: demonstration of competence in skills in line with those required for a graduate nurse at beginning level, in line with the ANCI competencies (1998); demonstrate safe and competent practice in line with the ANCI competencies and Australian and New Zealand College of Mental Health Nurses Inc. Standards of Practice for Mental Health Nursing, as defined for a student at this stage of the course; and demonstrate competency in conducting a Mental Health Status Examination. Final assessment: Satisfactory/Unsatisfactory. Practicum Clinical Practicum Pass/Fail

HNB3236 TRANSITION TO PROFESSIONAL PRACTICE

Locations: St Albans,

Pre-requisites: Nil.

Descriptions: The topics to be taught in this subject are: the health care system and various forces influencing health care delivery including health policy; organisational structures and functions; leadership, followership; principles of management and management of resources; organisational culture; effective communication strategies; problem solving, prioritising and decision making; quality improvement and outcomes; and consumer consultation; professional role expectation, employer and employee relationship; and development of a CV and interview techniques.

Credit Transfer Arrangements (including Articulation Pathways) if applicable.

Credit Points: 8

Learning Outcomes: At the completion of this subject, the students should be able to:

- Understand the research process in relation to midwifery practice;
- Critically examine the relationship between midwifery research and improvement in health care outcomes;
- Develop an understanding of research designs and methodologies;
- Critically evaluate a piece of midwifery research;
- Understand the ethical implications of research;
- Develop a beginning knowledge in research proposal relevant to clinical practice;
- Be able to access and appraise research papers and systematic review;
- Develop the ability to appraise a systematic review of the literature on an aspect of clinical practice; and
- Understand how to utilise research to inform clinical practice.

Class Contact: Equivalent of 56 hours


Assessment: Assignment (2000 words): 50%; Examination: 50%
HNB3248 CLINICAL PRACTICUM 8 (ELECTIVE): CHILD, ADOLESCENT & FAMILY

**Locations:** St Albans,

**Pre-requisites:** HNB3108 - NURSING THEORY 6 CHILD ADOLESCENT & FAMILY

**Descriptions:** Students will undertake 140 hours of clinical practice in a range of institutional, residential or community health care settings.

**Credit Points:** 16

**Learning Outcomes:** On completion of this subject, students should be able to:

- Assess basic needs of children and adolescents in a variety of clinical settings;
- Plan and implement basic comprehensive nursing care specific to patients paediatric problems and other related needs of the child and adolescent that is appropriate for their cultural/indigenous background;
- Evaluate the effectiveness of nursing interventions;
- Participate as a member of the multidisciplinary team in a paediatric and adolescent setting;
- Develop basic clinical decision-making skills when assisting in the care of children, adolescents and their families; and
- Develop competence in basic paediatric and adolescent nursing skills in a clinical setting.

**Class Contact:** 140 hours of clinical experience.


**Assessment:** In order to be awarded a satisfactory grade for this subject, the student must successfully complete each of the following: demonstration of competence in skills in line with those required for a graduate nurse at beginning level, in line with the ANMC competencies (2005), previously known as ANCI competencies (1998); satisfactory participation in reflective practice, as defined by completion of personal learning objectives and reflective journal entries during each week of clinical placement; and demonstration of safe and competent practice in line with that required for a graduate nurse at beginning level, and in line with the ANMC competencies (2006). Final assessment: Satisfactory/Unsatisfactory. Practicum 140 hours of clinical experience Pass/Fail

HNB3249 CLINICAL PRACTICUM 8 (ELECTIVE): HEALTH & ILLNESS IN OLDER ADULTS

**Locations:** St Albans,

**Pre-requisites:** HNB2136 - CLINICAL PRACTICUM 3: HEALTH AND ILLNESS IN OLDER ADULTS

**Descriptions:** The student will undertake clinical practice and engage in reflective practice with a mentor/clinical educator.

**Credit Points:** 16

**Learning Outcomes:** On successful completion of this unit, students are expected to be able to:

- Analyse the impact positive aging has on the community;
- Categorise the risks associated with aging from psychological, physiological and sociological aspects;
- Demonstrate competency in assessment of the older adult congruent with the aging process and altered pathology;
- Develop individualised care plans acknowledging physical, mental, communication and cultural/indigenous considerations;
- Participate in the education of clients and their significant others in the promotion of healthy aging; and
- Develop strategies for continuous improvement in the care and empowerment of the older person.

**Class Contact:** 140 hours of clinical experience.


**Assessment:** In order to be awarded a satisfactory grade for this unit, the student must successfully complete each of the following: demonstration of competence in skills in line with those required for a graduate nurse at beginning level, in line with the ANMC competencies (2005); satisfactory participation in reflective practice, as defined by completion of personal learning objectives and reflective journal entries during each week of clinical placement; and demonstration of safe and competent practice in line with that required for a graduate nurse at beginning level, and in line with the ANMC competencies (2006). Final assessment: Satisfactory/Unsatisfactory. Practicum 140 hours of clinical experience Pass/Fail

HNB3250 CLINICAL PRACTICUM 9: CONSOLIDATION

**Locations:** St Albans,

**Pre-requisites:** ALL PREVIOUS NURSING PRACTICE AND CLINICAL PRACTICE UNITS OTHER THAN ELECTIVE UNITS.

**Descriptions:** Utilising experience from the previous placements, students will be expected to develop an increasingly independent role in the delivery of nursing care to clients in the chosen setting and be capable of planning, implementing and evaluating care with minimal supervision. Clinical teachers and/or preceptors will supervise students during this period of experiential learning. Clinical teachers and preceptors will use the Australian Nursing and Midwifery Council (ANMC) Competencies (2006) as an assessment framework. Reflective practice will be encouraged in order to enable students to critically evaluate their clinical practice. A debriefing session once or twice a week will provide an opportunity to share and reflect on their progress with their peers.

**Credit Points:** 16

**Learning Outcomes:** Learning Outcomes will vary depending on the clinical area chosen. The student will be expected to develop knowledge and skill appropriate for a graduate nurse at beginners level within this chosen area. This will include demonstrating the ability to take a full patient load, show appropriate clinical knowledge and decision-making skills and demonstrate clinical skills appropriate to a beginning nursing practitioner.

**Class Contact:** Equivalent of 140 hours of clinical experience.

**Required Reading:** National Competency Standards for the Registered Nurse Australian Nursing and Midwifery Council (2006) (4th ed.)

**Assessment:** Practicum Students will be awarded a Pass/Fail. In order to be awarded a satisfactory grade for this subject, the student must successfully complete each of the following: demonstration of competence in skills in line with those required for a graduate nurse at beginning level, satisfactory participation in reflective practice, as defined by completion of personal learning objectives and reflective journal entries during each week of clinical placement; and demonstration of safe and competent practice in line with that required for a graduate nurse at beginning level, and in line with the ANMC Competencies 2006.

HNB3251 NURSING THEORY 8: (ELECTIVE) ACUTE CARE

**Locations:** St Albans,

**Pre-requisites:** NURSING PRACTICE 7: ACUTE CARE

**Descriptions:** The content of this unit will be organised around the body systems approach. This subject will cover the nursing management of patients in the acute care setting including:

- Co-morbidities, complex acute illnesses, including the management of patients
with spinal injuries and infectious diseases shock and multi-trauma in acute care settings;
• Focused assessment, planning, implementation and evaluation of nursing interventions of patients with complex care needs and their significant others;
• Complex wound assessment and interventions;
• The helping role of the nurse;
• A problem based learning approach will facilitate students in the formulation and implementation of appropriate interventions in the management of clients experiencing illness. Students are expected to develop knowledge and skill appropriate for a graduate nurse at the beginning level;
• Critique of evidenced based nursing;
• Abody systems approach will be used as organising framework for client assessment; and
• Factors such as cultural and indigenous issues, legal and ethical issues, communication skills, and organisational factors will also be considered in the analysis of client care in acute medical/surgical settings.

Credit Points: 8

Learning Outcomes: On successful completion of this unit, students should be able to:
• Apply problem based learning skills to the identification of nursing problems, appropriate interventions and prioritisation of care for clients with complex needs in the acute medical/surgical setting;
• Demonstrate knowledge of the relevant pharmacological agents used to treat clients with altered function of specified body systems;
• Demonstrate competence in complex nursing skills related to clients experiencing medical/surgical conditions and an understanding of underlying pathophysiology and possible complications of medical conditions and those requiring surgical intervention;
• Incorporate relevant theoretical concepts from the associated units into the analysis of complex client care in the acute medical/surgical setting;
• Apply comprehensive client assessment skills relevant to conditions;
• Integrate and apply appropriate theoretical and clinical knowledge to the delivery of health care to clients experiencing illness at beginning graduate nurse level that is appropriate to the clients cultural/indigenous background;
• Identify the relevant ethical and legal issues associated with nursing clients experiencing complex medical/surgical problems;
• Evaluate patient education related to clients experiencing illness;
• Demonstrate increasing ability to apply critical reasoning in the care of clients with acute medical/surgical conditions;
• Liaise with other careers in the care of their clients;
• Identify individual learning needs to plan and implement nursing care to clients; and
• Utilise a self-directed approach to learning and professional development.

Class Contact: Equivalent of 40 hours over 4 weeks comprising of lectures, tutorials and labs.


Assessment: Case Study Assignment (2000 words). 50%

HNB3252 CLINICAL PRACTICUM 8: (ELECTIVE) ACUTE CARE

Locations: St Albans,

Pre-requisites: HNB 3105 NURSING THEORY 7: ACUTE CARE, HNB 3106 CLINICAL PRACTICUM 7: ACUTE CARE

Descriptions: Utilising experience from the previous acute care placement, students will be expected to develop an increasingly independent role in the delivery of nursing care to clients in an acute medical/surgical setting and be capable of planning implementing and evaluating care with minimal supervision. Students will be supervised by clinical teachers and/or preceptors during this period of experiential learning. The Australian Nursing and Midwifery Council (ANMC) Competencies will be used as an assessment framework by preceptors and clinical instructors. Reflective practice will be encouraged in order to enable students to critically evaluate their clinical practice. A debriefing session once or twice a week will provide an opportunity to share and reflect on their progress with their peers. Client-student ratios will be graduated throughout the placement and numbers will depend upon the level acuity.

Credit Points: 16

Learning Outcomes: On completion of this subject, students should be able to:
• Demonstrate the application of knowledge acquired through related theoretical and skills based subjects;
• Adopt knowledge of health assessment procedures to the individualized care requirements of clients in the acute care setting;
• Perform safe and competent nursing care in accordance with the Australian Nursing and Midwifery Council (ANMC) Competencies (2006), and consistent with level of knowledge and performance required of a graduate nurse at beginning level;
• Develop individualised nursing care plans for clients acknowledging physical/mental condition, communication skills, socio-cultural or indigenous background and developmental stage;
• Apply the principles of occupational health and safety and infection control to all aspects of health care delivery;
• Apply knowledge of communication skills to all aspects of the clinical experience, and demonstrate appropriate interpersonal skills with clients, families, and healthcare personnel;
• Demonstrate knowledge of pharmacological agents such as route of administration, distribution, metabolism, common side effects and excretion;
• Apply legal and ethical principles to the holistic health care requirements of clients;
• Participate in reflective practice process through documentation, discussion and self-evaluation of learning experiences both on campus and in the clinical setting and the relationship between these experiences;
• Critically apply relevant theoretical concepts from related areas of study in the analysis of nursing situations; and
• Participate in client education and provide information regarding the availability of community resources for persons requiring assistance on discharge or transfer.

Class Contact: 140 hours of clinical experience

Satisfactory/Unsatisfactory In order to be awarded a satisfactory grade for this subject, the student must successfully complete each of the following: Satisfactory performance of holistic assessment of one client, as demonstrated by care planning documentation; Demonstration of competence in skills in line with those required for a graduate nurse at beginning level, in line with the Australian Nursing and Midwifery Council (ANMC) competencies (2006); Satisfactory participation in reflective practice, as defined by completion of personal learning objectives and reflective journal entries during each week of clinical placement; and Demonstration of safe and competent practice in line with that required for a graduate nurse at beginning level, and in line with the Australian Nursing and Midwifery Council (ANMC) competencies (2006). Final assessment: Satisfactory / Unsatisfactory Practicum Satisfactory/Unsatisfactory Clinical Performance Pass/Fail

Learning outcomes:

• Have acquired a knowledge of legislation and ethical considerations pertaining to the drug administration responsibilities of midwifery;

• Legal and ethical principles of drug administration;

• Quality use of medications including safety and efficacy issues;

• Medication use across the lifespan and polypharmacy;

• Sociocultural factors influencing drug therapy;

• Adverse drug reactions and interactions;

• The role of midwives in education and medication therapeutic intervention; and

• Exemplars of commonly-used drug groups.

Credit Points: 8

Learning Outcomes: On successful completion of this unit students will be expected to:

• Develop an understanding of the general principles of pharmacology as they relate to midwifery practice;

• Have acquired a knowledge of legislation and ethical considerations pertaining to the drug administration responsibilities of midwifery;

• Explain the principles of pharmacological interventions in the care of being with woman;

• Discuss safety and efficacy issues of medications pertaining to childbearing women;

• Apply evidence-based knowledge to midwifery practice; and,

• Discuss the relationship of conventional drug therapy to non-pharmacological and complementary therapies in the care of individuals.

Class Contact: Equivalent of 56 hours


Assessment: Examination 1.5 hour examination. 40% Drug Calculation Test is a hurdle requirement of the unit. This is graded as Satisfactory / Unsatisfactory.
regulations guiding the conduct and supervision of the research will be developed in the Course Rules and Regulations and will reflect the regulations to be developed by the Faculty Graduate Studies Research Committee.

Credit Points: 48

Learning Outcomes: The student will develop the necessary skills to successfully select, design, conduct and analyse and write up a minor research thesis.

Class Contact: Students will meet with a supervisor on a regular basis.

Required Reading: To be advised by lecturer.

Assessment: A thesis of a minimum of 15,000 words and maximum of 20,000 words.

HNH4201 MINOR THESIS (PART TIME)

Locations: St Albans,

Pre-requisites: HNH4101 - INQUIRY INTO NURSING KNOWLEDGE/HNH4103 Advanced Qualitative Methods OR HNH4102 Advanced Quantitative Methods

Descriptions: The minor thesis is intended to provide students with an opportunity to undertake independent enquiry into an area of personal interest and applicable to the profession of nursing. The thesis will be a research paper of not less than 10,000 words and not more than 20,000 words. It will report on independently conducted research which demonstrates a student’s ability to clearly define a problem, to undertake a detailed literature search and review the relevant theoretical and practical literature on the topic area. Good data selection, collection and analysis skills should also be demonstrated. The thesis should involve a high standard of written communication skills. The topic, which is chosen, should allow the candidate to develop a methodology and to apply it to an appropriate problem or situation. It is intended that the topic chosen for investigation will be in consultation with an appropriate supervisor who will oversee the conduction of the research. Course regulations guiding the conduct and supervision of the research will be developed in the Course Rules and Regulations and will reflect the regulations to be developed by the Faculty Graduate Studies Research Committee.

Credit Points: 24

Learning Outcomes: The student will develop the necessary skills to successfully select, design, conduct and analyse and write up a minor research thesis.

Class Contact: Students will meet with a supervisor on a regular basis.

Required Reading: To be advised by lecturer.

Assessment: A thesis of a minimum of 15,000 words and maximum of 20,000 words.

HNH4210 EXAMINING PRACTICE

Locations: St Albans,

Pre-requisites: To be advised.

Descriptions: Examining Practice equips students with the skills and knowledge required to complete a rigorous research study. Students will develop a theoretical framework of inquiry through critique of the literature and reflective practice. Students will develop the ability to identify, critique and document the evidence base relevant to a chosen research area, and identify searchable issues and questions. Knowledge and skills developed will include:

- Theoretical frameworks - the nature of nursing knowledge and reflective practice; principles, practice and tools for personal engagement in researching practice;
- Evidence-based practice, practice based professional development and quality assurance processes;
- Critical and theoretical analysis of a context or aspect of practice by systematic review, critique of relevant literature and synthesis of information in a literature review on a chosen topic;
- The relevant ethical principles related to healthcare research.

The literature review that is developed in this unit will form the basis of the literature review chapter for the thesis.

Credit Points: 24

Learning Outcomes: After satisfactorily completing this unit students will be able to:

- Discuss the research process in relation to nursing/midwifery practice including the principles of evidence-based practice and quality assurance processes;
- Critically evaluate key aspects of the relationship between research and improvement in health care outcomes;
- Perform reflective practice in relation to a chosen area of research;
- Systematically critique the scientific literature and synthesize the literature in a selected area to develop a literature review;
- Appraise a range of methodologies and methods used in healthcare research;
- Justify the relevant ethical principles related to healthcare research.

Class Contact: 60 hours or equivalent for one semester comprising lectures, tutorials, seminars and flexible learning delivery modes.


Assessment: Presentation Seminar presentation 40% Students must achieve an aggregate score of 50% to pass this unit of study.

HNH4312 MINOR THESIS A

Locations: St Albans,

Pre-requisites: Nil

Descriptions: The aim of this subject is to provide students with the opportunity to plan for successful conduction of research. The major emphasis of this subject will focus on the planning and development of the research proposal. The topics covered in this subject will result from negotiation between the student and the supervising lecturer and will be influenced by the needs of individual students. Topics which would be expected to be considered include the role of a literature review, how to clarify a research problem, method(s) of inquiry relevant to the problem and writing a research proposal.

Credit Points: 16

Learning Outcomes: To be advised.

Class Contact: Students will meet with a supervisor on a regular basis. The nature of the work required could be estimated as equivalent to three contact hours per week.

Required Reading: Nil

Assessment: Research proposal.

HNH4313 MINOR THESIS B (PART-TIME)

Locations: St Albans,

Pre-requisites: HNH4312 - MINOR THESIS A OR equivalent.

Descriptions: The minor thesis is intended to provide students with an opportunity to undertake independent enquiry into an area of personal interest and applicable to the profession of nursing. The thesis will be a research paper of not less than 10,000 words and not more than 20,000 words. It will report on independently conducted research which demonstrates a student’s ability to clearly define a
problem, to undertake a detailed literature search and review the relevant theoretical and practical literature on the topic area. Good data selection, collection and analysis skills should also be demonstrated. The thesis should involve a high standard of written communication skills. The topic which is chosen should allow the candidate to develop a methodology and to apply it to an appropriate problem or situation. It is intended that the topic chosen for investigation will be in consultation with an appropriate supervisor who will oversee the conduction of the research. Course regulations guiding the conduct and supervision of the research will be developed in the Course Rules and Regulations and will reflect the regulations to be developed by the Faculty Graduate Studies Research Committee.

Credit Points: 24
Learning Outcomes: To be advised.
Class Contact: To be arranged with supervisor.
Required Reading: To be advised by lecturer.
Assessment: A thesis of a minimum of 10,000 words and maximum of 20,000 words.

HNH4314 MINOR THESIS B (FULL-TIME)
Locations: St Albans,
Pre-requisites: HNH4312 - MINOR THESIS AOR equivalent.
Descriptions: The minor thesis is intended to provide students with an opportunity to undertake independent enquiry into an area of personal interest and applicable to the profession of nursing. The thesis will be a research paper of not less than 10,000 words and not more than 20,000 words. It will report on independently conducted research which demonstrates a student’s ability to clearly define a problem, to undertake a detailed literature search and review the relevant theoretical and practical literature on the topic area. Good data selection, collection and analysis skills should also be demonstrated. The thesis should involve a high standard of written communication skills. The topic which is chosen should allow the candidate to develop a methodology and to apply it to an appropriate problem or situation. It is intended that the topic chosen for investigation will be in consultation with an appropriate supervisor who will oversee the conduction of the research. Course regulations guiding the conduct and supervision of the research will be developed in the Course Rules and Regulations and will reflect the regulations to be developed by the Faculty Graduate Studies Research Committee.

Credit Points: 48
Learning Outcomes: To be advised.
Class Contact: To be arranged with supervisor.
Required Reading: To be advised by lecturer.
Assessment: A thesis of a minimum of 10,000 words and maximum of 20,000 words.

HNM3021 INDEPENDENT LEARNING UNIT
Locations: St Albans,
Pre-requisites: To be advised.
Descriptions: The learning contract of this unit will be negotiated by the student with the academic mentor. It is anticipated that extensive pre-reading relevant to the topic area will be required in order for the student to select an appropriate topic and complete a study plan, prior to undertaking the unit.

Credit Points: 8
Learning Outcomes: On completion of this unit, students will be able to:
- Plan a learning contract which will act as a guide for learning strategies and activities for a particular area relating to midwifery practice;
- Develop strategies, where appropriate, to demonstrate increased expertise in a particular area of midwifery;
- Prepare an outline of their topic which can be used as a basis for group presentation and discussion.

Core graduate attributes to be achieved by students are:
- The subject will assist students to identify and solve complex problems related to professional practice, selecting from strategies appropriate to the discipline and reflecting on ethical issues.
- Students will be able to recognise when information is needed, and locate, evaluate, manage and use information critically for a range of purposes.
- Students will synthesise moderately complex material and write in a range of styles at a level approximating employment entry level with guidance.
- Students will follow complex instructions and manage time with minimal guidance.
- The subject will see students apply and evaluate strategies relating to issues of social cultural diversity in professional practice, seeking information where necessary.

Class Contact: To be advised.
Required Reading: In consultation with lecturer.
Assessment: Achievement in this subject will be assessed by the development and completion of a learning contract.

HNM5114 SUBSTANCE ABUSE STUDIES 1
Locations: St Albans,
Pre-requisites: Nil
Descriptions: This unit provides the student with the opportunity to examine the theories and models that underpin past and current approaches to dealing with substance abuse. This unit also considers basic principles and practices in health promotion and prevention related to substance abuse. Current models related to health promotion and prevention principles related to harm minimisation will be considered with emphasis on the impact of substance use on individuals, families and communities. Each student will contract to develop and present a health promotion / prevention program related to substance abuse.
Credit Points: 16

Learning Outcomes: At the completion of this unit the students will be able to:

- Analyse the value of selected models and theories of substance abuse;
- Examine patterns of substance abuse in selected sub-populations of the community; and
- Critically examine the student's own belief system and values about substance abuse.
- Display an understanding of health promotion theories
- Identify health promotion principles and appropriate strategies to promote prevention in substance abuse
- Develop skills in planning, implementing and evaluating programs that target substance abuse prevention.

Class Contact: Two hours lecture per week for 12 weeks One-hour tutorial per week for 12 weeks.


Assessment: Hurdle requirements of reflective journal related to tutorial participation, 80% attendance required. Each student is required to write a 2,500 word assignment related to theories of addiction (60%). The student will develop a drug and alcohol program targeting a specific cohort. The student will present this program to the class (40%).

HNMS124 SUBSTANCE ABUSE STUDIES 2

Locations: St Albans,
Pre-requisites: HNMS114 - SUBSTANCE ABUSE STUDIES 1

Descriptions: The focus of this unit is to provide the student with the opportunity to examine the treatment models that underpin past and current approaches to dealing with substance abuse. This subject considers the skills and knowledge related to therapeutic communication with clients who have drug and alcohol problems. Counselling models related to dealing with clients with substance abuse problems will be addressed, with specific focus on Motivational Interviewing. This subject has an emphasis on practical competencies for the student.

Credit Points: 16

Learning Outcomes: On completion of this unit, students will be able to:

- Analyse the value of selected treatment modalities for substance abuse;
- Explore contemporary issues related to treatment of substance abuse;
- Examine non traditional treatment modalities of substance abuse and
- Critically examine the legal and ethical context in which substance use and treatment occurs.
- Display an understanding of therapeutic communication theories.
- Identify counselling principles and strategies deal with clients with substance abuse problems.
- Develop skills in motivational interviewing.

Class Contact: Two hours lecture per week for 12 weeks = 24 hours One-hour tutorial per week for 12 weeks = 12 hours Total 36 hours


HNMS134 ADVANCED CLINICAL & HEALTH ASSESSMENT (SUBSTANCE ABUSE STUDIES)

Locations: St Albans,
Pre-requisites: Nil

Descriptions:

- A Multicultural society: Australians of Aboriginal and non-Aboriginal heritage.
- The phenomenon of culture and maintenance of values;
- The diversity of health-related schema in Australian society: personalistic, naturalistic and biomedical;
- The process of acculturation and partial acculturation;
- Determining congruence between client and professional Explanatory Models;
- Approaches to health assessment;
- Growth and measurement, physical examination techniques and equipment;
- Mental status assessment;
- Physical systems assessment, including the interpretation and integration of pathological results;
- Lifestyle practices and social situation assessment in relation to health needs.

Credit Points: 16

Learning Outcomes: On completion of the subject, students should be able to perform an advanced health assessment, including:

- appraise the role of culture and other variables in the formation and maintenance of peoples health-related experiences, beliefs and practices;
- determine a clients explanatory model as an integral part of their overall assessment;
- determine where there is a lack of congruence between their own explanatory model and that of their clients;
- utilise concepts from a range of disciplines to obtain a medical history relevant to their field of practice;
- assess clients physical status utilising their understanding of the complications and consequences of disease processes;
- assessment of clients mental and psychological states on the trajectory of their disease;
- evaluate the impact of lifestyle factors that may impact on a persons health, including diet, exercise, smoking, drug and alcohol use, work, leisure and sleep pattern;
- critique emerging and potential health care literature for its application to client assessment.

Class Contact: 36 hours

Assessment: 50% Assignment 2500 words:50% Case history and presentation (20 minutes)

HNM5204 SUBSTANCE ABUSE CLINICAL INTERNSHIP

Locations: St Albans,

Pre-requisites: HNM5114 - SUBSTANCE ABUSE STUDIES 1

Descriptions: A total of 36 hours of time will be spent within a facility that provides Substance Abuse (eg. Hospital or Healthcare clinic) under the supervision of an accredited Substance Abuse Educator. Students will engage in, and/or observe, practice in all fields of Substance Abuse education, including: health assessment, one-on-one and group education, health promotion and education of allied health practitioners.Clinical Assessment Schedules will be developed by the School of Nursing & Midwifery.

Credit Points: 16

Learning Outcomes: On the completion of this practicum, the students should be able to:

• develop and enhance Substance Abuse education and management clinical skills introduced in theoretical subjects in a practice setting;
• observe, and practise under the supervision of, experienced clinicians in interviewing, assessing, and managing the care of Substance Abuse clients;
• further develop their understanding of evidence-based practice in Substance Abuse;
• expand their theoretical knowledge of learning and teaching principles, counselling techniques and communication strategies in a Substance Abuse clinical setting;
• plan, develop, implement and evaluate client and peer educational Substance Abuse programs;
• participate in a community oriented health education/promotion program involving needs assessment, planning, implementation and/or evaluation phase(s);
• extend their understanding of the multidisciplinary nature of Substance Abuse care;
• work towards further developing personal skills in Substance Abuse and management which includes:
  • the ability to adapt to new and challenging situations;
  • assess and develop further awareness of personal strengths and weaknesses;
  • critique presentation skills;
  • acquire self-evaluation abilities.

Class Contact: Clinical practice of 72 hours


Assessment: A satisfactory pass related to clinical competency assessment devised by Victoria University.

HNM5214 ADVANCED CLINICAL MEDICATION MANAGEMENT (SUBSTANCE ABUSE STUDIES)

Locations: St Albans,

Pre-requisites: Nil

Descriptions:

• Principles of pharmacotherapy, drug action- pharmacokinetics and pharmacodynamics
• Toxicology
• Illicit and licit Drugs related to substance abuse
• Medications summaries and drug interactions
• Assembling a treatment program
• Medication compliance and quality use of medicines
• Speciality based medication
• Pharmacotherapies related to substance abuse

Credit Points: 16

Learning Outcomes: From this subject the student should develop an advanced understanding of the therapeutic use of drug therapy with reference to their specialised area of care.

Class Contact: 36 hours

Required Reading: As advised by lecturer

Assessment: Exam (2 hours) (Multi-choice and short answer questions) 40%Assignment (2500 words) 60%

HNM6200 HEALTH PROMOTION

Locations: St Albans,

Pre-requisites: Nil

Descriptions:

• Contemporary concepts, values and debates in health promotion
• Health literacy at individual and aggregate levels
• Education for health self efficacy, peer education, motivational interventions
• Selection of appropriate interventions for facilitating learning at an individual level
• The policy context and its appraisal
• Population/ community assessment strategies
• Using the media
• Community/organisational development strategies
• Sustainability
• Working with individuals from culturally and linguistically different backgrounds
• Emancipatory approaches to health promotion
• Collaboration, partnerships and team work
• Evaluation of practice

Credit Points: 16
Learning Outcomes: On the completion of this subject the student should be able to:

• determine learning and health promotion needs of both individuals and aggregates of people;
• appraise policy for its health enhancing potential;
• utilise health promotion strategies that are cognisant of, and sensitive to, the cultural and social identities of individuals and groups;
• discriminate between practices that are emancipatory and those that are not;
• critically analyse programs and projects in relation to their potential to yield sustainable health outcomes;
• evaluate, at a theoretical level, approaches undertaken to enhance the health and wellbeing of individuals or groups of people.

Class Contact: 36 hours


Assessment: Assignment (2500 words) 50% Case study 50%

HNM6800 RESEARCH THESIS (FULL-TIME)

Locations: St Albans,

Pre-requisites: To be advised.

Descriptions: This subject, the aim of which is to enable students to competently research an area of study utilising knowledge and skills gained in previous studies, consists of a project carried out by students on an individual basis. The project is expected to be an investigation of an approved topic, followed by the submission of a suitably formatted thesis in which the topic is introduced and formulated; the investigation described in detail; results and conclusions from the study elaborated; and an extended discussion presented. Students may be required to undertake same lecture courses, as specified at the time of commencement.

Credit Points: 48

Learning Outcomes: To be advised.

Class Contact: Independent research in addition to regular meetings with the students supervisors.

Required Reading: To be advised by supervisor.

Assessment: The thesis will normally be assessed by at least two expert examiners from an appropriate area of expertise.

HNM7006 MIDWIVES WORKING WITH DIVERSITY

Locations: On-line,

Pre-requisites: Nil

Descriptions: Module One: Framing the subject: Knowing self; Feminist and Humanistic principles in working with diversity; Defining sexuality and its relationship to childbirth. Module Two: Cultural diversity: Cultural safety/sensitivity; Aboriginality; Women from diverse cultural and ethnic backgrounds; Spiritual differences & cultural practices. Module Three: Social diversity: Social justice, equity and access; Poverty and maternity; homelessness; physical and sexual abuse; chemical dependency.

Credit Points: 12

Learning Outcomes: To be advised.

Class Contact: Thirty-six hours for one semester, conducted via flexible delivery.


Assessment: A combination of the following, or other appropriate methodologies will be used: examination; written assignment; reflective journal; and learning folio.

HNM7113 FOUNDATIONS IN MIDWIFERY PRACTICE

Locations: St Albans,

Pre-requisites: To be advised.

Descriptions: Module 1 The unit will include the following content: Functional Health Patterns, emphasis on health perception and management, clinical reasoning process, occupational health and safety, Procedural hand washing and asepsis, the complete midwifery health history and general survey, general health assessment, assessment of family health, assessment of mental health status, cultural assessment.

Module 2 Defining the role of the midwife in contemporary practice, exploring the desirable attributes of a midwife, exploring the philosophical basis underpinning the role of the midwife in contemporary midwifery practice; being with woman, woman centeredness, working in partnership, establishing relationships with childbearing women. Explore the art of midwifery, relationship, communication, boundaries of care, midwife as primary carer, midwife’s role in collaborative practice, establishing a partnership, philosophy of care.

Credit Points: 12

Learning Outcomes: Module 1

On successful completion of this module, students are expected to be able to:

• Demonstrate beginning health assessment skills;
• Practice assessment for mental health;
• Utilise interpersonal and professional communication skills required for interviewing for health assessment;
• Incorporate the principles of occupational health and safety to the practice of midwifery health assessment;
• Practice the principles and process of infection control in the conduct of health assessment;
• Document health assessment data clearly and accurately in a midwifery context;
• Adapt the health assessment process to being with woman in the community environment;
• Apply clinical reasoning process skills to the practice of midwifery health assessment in the health care and community environment;
• Integrate the relevant ethical and legal issues associated with the conduct of health assessment of woman and child;
• Apply evidence-based knowledge to midwifery practice; and,
• Incorporate relevant theoretical concepts from associated subjects in the planning, implementation and evaluation of the practice of midwifery health assessment.

Module 2
On successful completion of this module, student are expected to be able to:
• Describe the role of the midwife in contemporary midwifery practice;
• Discuss the philosophical basis underpinning the role of the midwife in contemporary midwifery practice;
• Analyse the boundaries of care in midwifery;
• Describe the with woman philosophy of midwifery;
• Provide midwifery care with woman during a hospital stay; and
• Document accurately with woman care as required by the clinical agency under supervision and appropriate to this level of the course.
• Clinical practice.
The student will be expected to complete 80 hours clinical midwifery practice under supervision in a maternity care setting.
Supervised practice will include:
• Application of principles of communication skills;
• Reflection in and of action;
• Journal writing, and,
• In partnership with woman and under supervision assess woman and her baby.

Class Contact: 140 hours - 60 hours theory, 80 hours block clinical placement.

Required Reading:

Assessment: Examination 1.5 hour examination. 40% Demonstration of safe and competent practice according to the Australian Nursing & Midwifery competencies for this stage of the course (80 hours clinical placement).

HNM7114 CONTINUITY OF CARE 1

Locations: St Albans,

Pre-requisites: To be advised.

Descriptions: Students will be introduced to the Continuity of Care program in which they make contact with pregnant women in clinical venues or in the community. Students will be assisted to develop a professional midwifery practice relationship with emphasis on basic interviewing and history taking; reflective practice; journal writing; application of principles of communication; assessment of the woman and her baby; working with a woman giving birth; working with the woman to feed her baby; working with the woman to care for herself and her baby before and after birth; and documentation of midwifery actions and women’s attitudes and responses. Students will explore the position of contemporary midwifery practice with emphasis on: historical context; evolution of the profession of midwifery; midwifery identity: the uneasy tensions between midwifery and nursing and midwifery and medicine; role of the midwife; and models of care.

Credit Points: 8

Learning Outcomes: On successful completion of this unit, students are expected to be able to:
• Demonstrate qualities of woman-centred midwifery practice using theoretical understandings gained in the subject Childbearing Journey 1;
• Describe working with woman in childbirth using the theoretical understandings gained in the midwifery and anatomy and physiology subjects;
• Demonstrate developing midwifery practice skills necessary to provide woman-centred midwifery practice;
• Recognise the importance of being with woman in her social context in the provision of maternity services;
• Demonstrate beginning skills in health assessment with woman and the baby at various stages of pregnancy;
• Demonstrate the ability to undertake beginning level health documentation in midwifery;
• Accurately assess, collect and record data for health profiles/histories of being with woman during childbirthing;
• Make contact with a minimum of ten women (in the clinical venue) expecting to give birth later in the year for the purpose of following through their birthing experience from early pregnancy to the first weeks after birth;
• Analyse historical and contemporary issues in the development of the midwifery profession;
• Apply evidence-based knowledge to midwifery practice;
• Discuss the scope of midwifery practice in Australia and internationally; and
• Discuss models of maternity care and service provision in Australia.

Class Contact: 74 hours - 24 hours theory, 50 follow-through journey clinical hours.


Assessment: Practicum Partnership log focusing an follow-through of women (5 women and 50 supervised clinical hours. Pass/Fail
HNM7115 MIDWIFERY STUDIES 1: THE CHILDBEARING JOURNEY

Locations: St Albans,

Pre-requisites: Nil.

Descriptions: This subject will include: preconception, sexuality, fertility/infertility, pre-conception health, environmental issues. The foetus and the woman during pregnancy: embryology, foetal growth & development, physiological and psychosocial alteration & adaptation during pregnancy, maintenance of health, principles of optimal nutrition for the woman and her baby, pregnancy assessment. Labour and birth: physiological and psychosocial alteration and adaptation during labour and birth, facilitating a normal process of birth, supporting a woman during labour, continuity of care, assessment, reception of the newborn. Skill development and application of principles in basic midwifery care: Assessment, history taking, interviewing techniques, data collection and recording (using women-held records); Introduction to clinical paths: health assessment and physical examination skills - pregnancy assessment including abdominal examination - labour assessment including vaginal examination. Introduction to primary health counselling: guidelines for undertaking primary health counselling; facilitating informed decision making; accessing relevant information; engaging in health promotion activities; communication; counselling: partnership with woman. Assessment in labour: assessment of the woman, culture & family, pain assessment, foetal assessment, progress of the birth process. Midwifery care in partnership during birthing: comfort; orientation to environment; partnership, dignity and respect; support and position; mobilization.

Credit Points: 8

Learning Outcomes: Students will be expected to:

- Identify element of partnership building and woman-centered care in being with woman;
- Explore self as midwife and how this relates to being with woman;
- Discuss the concepts of trust, empowerment and choice within the woman-midwife partnership to gain an understanding of being with woman and childbirthing as a normal life event;
- Describe in detail the anatomy and physiology of the human reproductive system, including pre-conception, pregnancy, foetal development, birth, lactation and the baby;
- Demonstrate an understanding of the physiology of pregnancy, labour and birth, and its relationship to providing effective midwifery care;
- Demonstrate principles and practices of midwifery care with woman during pregnancy and labour and birth including assessment of maternal and foetal well-being;
- Develop beginning midwifery practice skills for the promotion of individual health, growth and development within a woman-centred focus of learning in midwifery practice;
- Perform fundamental clinical midwifery skills in a simulated laboratory and clinical environment;
- Demonstrate skills for the assessment of health and development with childbearing woman of various ages and social situations;
- Accurately assess, collect and record data for health profiles/histories of being with woman during childbirthing;
- Describe the principles of primary health counselling applied to being with woman during childbearing;
- Apply evidence-based knowledge to midwifery practice; and,
- Utilise evidence based practices to support their learning by:
- Search for and find midwifery and health related articles using appropriate databases;
- Demonstrate search strategies using Boolean operators and MESH terms; and
- Evaluate the information found for its accuracy and quality.

Class Contact: 70 hours - 60 hours theory, - 10 hours self directed.


Assessment: 3-hour examination - 60%, Essay [1500 words] - 40%.

HNM7201 MIDWIFERY STUDIES 2: THE CHILDBEARING JOURNEY

Locations: St Albans,

Pre-requisites: To be advised.


Credit Points: 8

Learning Outcomes: To be advised.

Class Contact: 70 hours - 60 hours theory, 10 hours self-directed study.


Assessment: Three hour examination - 60%, Essay [1500 words] - 40%.

HNM7202 MIDWIFERY PRACTICE 2: THE CHILDBEARING JOURNEY

Locations: St Albans,

Pre-requisites: HNM7115 - MIDWIFERY STUDIES 1: THE CHILDBEARING JOURNEY

Descriptions: Students will be required to work in a maternity practice setting providing midwifery care for women and families under the supervision of a clinical teacher/preceptor. Supervised midwifery practice will include: interviewing and history taking techniques; reflection in and on action; journal writing; and application of principles of communication. In partnership with the woman and under supervision: Assessment of the woman and her baby; working with a woman giving birth; working with a woman to give nourishment to her baby; working with a woman to care for herself and her baby before and after birth; and documentation of midwifery actions and women’s attitudes and responses.

Credit Points: 24

Learning Outcomes: To be advised.
Class Contact: Block clinical placement of 208 hours.


HNM7203 MIDWIFERY STUDIES 3: CHILDBEARING COMPLICATIONS

Locations: St Albans,

Pre-requisites: HNM7115 - MIDWIFERY STUDIES 1: THE CHILDBEARING JOURNEY


Credit Points: 8

Learning Outcomes: Students will be expected to:

- Utilise knowledge from anatomy and physiology applicable to being with woman experiencing complicated pregnancies;
- Examine specific medical and obstetric conditions that affect childbirth;
- Evaluate the implications of obstetric interventions with woman related to midwifery practice;
- Critically examine the use of technology in midwifery and obstetric practice;
- Perform midwifery practice skills in a simulated laboratory and clinical environment;
- Demonstrate midwifery practice skills in the management of maternity care emergencies;
- Interpret the role of the midwife a member of a collaborative health-care team;
- Apply evidence-based knowledge to midwifery practice;
- Explore community resources available with woman for support in the community;
- Demonstrate an understanding of assessment of being with woman and her mental health status and contexts of care using a family-centred approach; and
- Identify woman-centred midwifery care strategies for being with woman to facilitate choice and partnership when complications in childbirth occur.

Class Contact: 70 hours - 60 hours theory, 10 hours self-directed study.


Assessment: Three hour examination: 60%, Essay (1500 words), 40%.

HNM7204 MIDWIFERY PRACTICE 3: CHILDBEARING COMPLICATIONS

Locations: St Albans,

Pre-requisites: HNM7115 - MIDWIFERY STUDIES 1: THE CHILDBEARING JOURNEY

Descriptions: In partnership with the woman and under supervision: Assessment of the woman and her baby; Working with a woman to give birth; Working with a woman to give nourishment to her baby; Working with a woman to care for herself and her baby before and after birth; and Documentation of midwifery actions and women’s attitudes and responses.

Credit Points: 24

Learning Outcomes: The student will be expected to:

- Demonstrate woman-centred midwifery care strategies for being with woman to facilitate choice and partnership when complications in childbirth occur;
- Apply appropriate knowledge in the care with woman experiencing childbirth complexities;
- Develop plans of care with woman experiencing childbirth complexities;
- Demonstrate understanding of specific conditions that affect pregnancy, labour and birth and the first weeks after birth;
- Evaluate the implications of obstetric interventions in maternity care;
- Critique the use of technology in maternity care;
- Demonstrate skills in the use of technology in midwifery and obstetric practice;
- Demonstrate the ability to manage maternity care emergencies;
- Demonstrate the ability to practice within a multidisciplinary team;
- Demonstrate skills in principles of primary level counselling applied to childbirth;
- Facilitate with woman access to appropriate community resources; and
- Apply evidence-based knowledge to midwifery practice.

Class Contact: Block clinical placement of 208 hours


Assessment: Practice assessment based on ACMI Competency Standards: Satisfactory/Unsatisfactory3 Reflective Journals: Satisfactory/Unsatisfactory

HNM7205 MIDWIVES WRKG WTH WOMEN FROM DIV BCKGRD

Locations: St Albans,

Pre-requisites: HBNW - Bachelor of Midwifery (Pre-Registration)

Descriptions: Framing the Subject

SCHOOL OF NURSING AND MIDWIFERY
Learning outcomes: On completion of this unit, students will be able to:

- Develop an understanding of their own values and beliefs, and the challenge presented when working with women who are different from their selves;
- Discuss the impact that social inequities have on being with woman during her childbearing experiences;
- Demonstrate an understanding of social justice issues impacting on with woman health in Australia;
- Demonstrate practice that reflects cultural safety and sensitivity with woman;
- Discuss specific issues impacting on the health of being with Aboriginal woman and her baby;
- Discuss the politics of with woman health with reference to contemporary issues;
- Apply evidence-based knowledge to midwifery practice; and,
- Examine with woman experiences as a recipient of health and maternity care, paying particular attention to socio-economic and cultural difference.

Class Contact: 56 hours: 48 hours theory- 8 hours self-directed study


Assessment: On-line participation in discussion groups: 10%
Essay [2000 words]: 60%
Oral presentation: 30%

Assessment: Practicum Partnership log - 5 women and 50 hours for 2009, 7 women and 70 supervised clinical hours from 2010 onwards). Pass/Fail

HNM7226 MIDWIFERY STUDIES 4 WOMENS HEALTH

Locations: St Albans,

Pre-requisites: Nil

Descriptions: Skill development in womans health assessment will be built in a simulated learning environment. The role of the midwife in primary health care will be discussed promoting health and wellness throughout the reproductive lifespan. Content will be explored within three modules representing common health problems experienced by women:

- Womens Health Across The Lifespan - First Impressions
- Puberty
- Controlling fertility/contraception
- Sexually transmitted diseases and infections (non HIV)
- Menstrual disorders
- Eating disorders and body image

Credit Points: 8

Learning Outcomes: On successful completion of this unit, students are expected to be able to:

- Describe the essential components to be considered when performing a comprehensive womens health assessment;
- Discuss the principles of primary health care in the promotion of health and wellness with diverse groups of women experiencing treatment for a range of womens health problems;
- Demonstrate knowledge of the common health problems women may experience throughout various life stages;
- Display an understanding of the physical and psychological aspects associated with selected women’s health problems.
- Identify the range of responses a woman may experience when confronted with a body altering health problem;
- Explore strategies to promote women’s participation in informed decision making and taking responsibility for self care; and
- Demonstrate an understanding of the need for reflective practice and the implementation of evidence informed care in private practice.

Class Contact: 60 hours theory


Assessment: Examination 3 hour 60%

HNM7227 MIDWIFERY PRACTICE 4

Locations: St Albans,

Pre-requisites: HNM7113 - FOUNDATIONS IN MIDWIFERY PRACTICE

Descriptions: Within a framework of working with woman in partnership, the role of the midwife providing primary and collaborative care with woman throughout the reproductive lifespan will be explored under the following subheadings:

- Undertaking a comprehensive with woman health assessment;
- Guidelines for practice and skill development;
- Primary care midwife promoting with woman wellness;
- Strategies for promoting: breast awareness and mammography screening (mammocheck program); regular cervical screening; healthy diet, regular weight-bearing exercise, pelvic floor exercises;
- Midwife providing woman-centered collaborative care in the acute care setting;
- Physical and psychological pre and post operative considerations;
- Caring with woman experiencing diagnostic & therapeutic procedures for reproductive and urinary conditions reflecting the specific care requirements;
- Caring with woman experiencing diagnostic & therapeutic procedures for breast related conditions reflecting the specific care requirements;
- Caring with woman experiencing treatment for cancers of the reproductive or breast related conditions; and
- Consequences of chemotherapy to be taken into consideration when planning care with woman.

Credit Points: 16

Learning Outcomes: On successful completion of this unit, students are expected to be able to:

- Describe the role of the midwife working in partnership as the provider of primary and collaborative care with woman throughout the reproductive health lifespan;
- Demonstrate skill in undertaking a with woman health assessment in an acute healthcare settings;
- Demonstrate midwifery practice skill in promoting wellness, healthy lifestyle messages and routine screening programs with woman in their care;
- Apply knowledge of with woman physical and psychological health in with woman experiencing reproductive and breast health concerns;
- Demonstrate understanding of specific reproductive health concerns with woman including cancer and urinary conditions;
- Develop a plan of woman-centred care with woman experiencing diagnostic and/ or therapeutic procedures in an acute care setting;
- Demonstrate midwifery practice skill in the delivery of woman-centred care with woman experiencing diagnostic and/ or therapeutic procedures in an acute care setting;
- Apply knowledge of discharge planning in partnership with woman experiencing short in-patient and day procedures related to reproductive and breast health concerns;
- Apply knowledge of specific reproductive and breast health concerns in evaluating woman-centred care outcomes;
- Employ reflective practice and implement evidence-informed care;
- Apply evidence-based knowledge to midwifery practice;
- Explore community resources available to support with woman with specific reproductive or breast health concerns;
- Demonstrate the ability to practice within a multidisciplinary team; and
- Document the ongoing relationship with woman they are following through in a way that reflects their own involvement and actions and the rationale for these, as well as with woman actions and attitudes and responses to midwifery actions.
Class Contact: Block clinical placement of 120 hours.

Required Reading: 

Assessment: Practicum Clinical Assessment Tool & clinical learning objectives: Satisfactory/ Unsatisfactory Pass/Fail

HNM7310 MIDWIFERY STUDIES 5 CHILDBEARING COMPLICATIONS

Locations: St Albans,

Pre-requisites: HNM7115 - MIDWIFERY STUDIES 1: THE CHILDBEARING JOURNEY

Descriptions: Unexpected Problems During Labour & Birth

- Preterm labour
- Inco-ordinate uterine action
- Intervention cascade
- Cord presentation and prolapse
- Foetal distress
- Primary postpartum haemorrhage
- Shoulder dystocia
- Maternal shock and collapse
- Collaborative and referral role of the midwife

Maternal health problems in first weeks after birth

- Breastfeeding problems
- Pyrexia
- Secondary postpartum haemorrhage
- Haematomas
- Post-caesarean section: extra care

Medical technology and procedures

- Ultrasound
- Cardiotocography
- Epidural analgesia
- Forceps & ventouse
- Caesarean birth and care
- Assist in obstetrical intervention
- Central venous pressure (CVP) monitoring
- Magnesium sulphate infusion
- Intravenous infusion pumps
- Dynamap and blood pressure monitoring
- Advanced CTG skills
- Perineal suturing
- Being with woman and resuscitation when sick.

Credit Points: 8

Learning Outcomes: On completion of this unit, students will be expected to:

- Examine specific medical and obstetric conditions that affect labour and birth and the postpartum period;
- Examine perinatal mental health issues and the implications for mothers, families and caregivers;
- Evaluate the implications of obstetric interventions for being with woman and midwifery practice;
- Critically examine the use of technology in midwifery and obstetric practice;
- Perform midwifery practice skills in a simulated laboratory and clinical environment;
- Demonstrate skills in the management of maternity care emergencies;
- Apply evidence-based knowledge to midwifery practice;
- Interpret the role of the midwife a member of a collaborative health-care team; and
- Explore community resources available to provide support with woman in the community.

Class Contact: 70 hours: - 60 hours theory- 10 hours self-directed study


Assessment: 3 hour examination: 60%Essay [1500 words]: 40%

HNM7311 MIDWIFERY PRACTICE 5 CHILDBEARING COMPLICATIONS

Locations: St Albans,

Pre-requisites: HNM7115 - MIDWIFERY STUDIES 1: THE CHILDBEARING JOURNEY

Descriptions: Utilising experience from the first and second maternity placement midwifery students will be expected to extend their practice repertoire in providing midwifery care with woman and families under the supervision of a clinical teacher/preceptor.

In partnership with woman and under supervision:

- Assessment of with woman and her baby;
- Working with woman giving birth;
- Working with woman to give nourishment to her baby;
- Working with woman to care for herself and her baby before and after birth; and
- Documentation of midwifery actions and with woman attitudes and responses.
Students will explore the position of contemporary midwifery practice with emphasis on:
• State and Federal constraints;
• Issues of professional boundaries; and
• Choice, continuity and control.

Credit Points: 8

Learning Outcomes: On successful completion of this unit students will be expected to:
• Demonstrate qualities of woman-centred midwifery practice using theoretical understandings gained in the subject Childbearing Journey;
• Describe working with woman in childbearing using the theoretical understandings gained in the midwifery and anatomy and physiology subjects;
• Demonstrate midwifery practice skills necessary to provide woman-centred midwifery practice;
• Recognise the importance of with woman and her social context in the provision of maternity services;
• Demonstrate midwifery practice skills in health assessment of being with woman and her baby at various stages of pregnancy;
• Demonstrate the ability to undertake higher level health documentation;
• Accurately assess, collect and record data for health profiles/histories of being with woman during childbearing;
• Make contact with a minimum of ten women (in the clinical venue) expecting to give birth later in the year for the purpose of following through their birthing experience from early pregnancy to the first weeks after birth;
• Apply evidence-based knowledge to midwifery practice;
• Explore the link between theory, policy and practice issues in midwifery; and
• Discuss access and equity issues pertaining to special population.

Class Contact: 126 hours: 16 hours theory- 110 follow through journey clinical hours


Assessment: For 2009 students are required to complete 3 Reflective journals and the theoretical hours of this unit as changes in the Nurses Board of Victoria clinical requirements mean that they have completed their total follow-through women (n = 20) in the units HNM7114 Continuity of Care 1 and HNM7208 Continuity of Care 2. In 2011 this will comprise 8 women and 80 supervised clinical hours.

For 2010 students will need to recruit 5 women and complete 50 supervised clinical hours with submission of their Partnership Log. Reflective journals x 3 and a Continuity of Care report (1000 words) will also be submitted: Satisfactory/ Unsatisfactory grading. Practicum For 2009, no further clinical hours required. For 2010, follow-through 5 women and complete 50 supervised clinical hours. Pass/Fail
HNM7313 MIDWIFERY STUD 6-BABIES NEED EXTRA CARE

Locations: St Albans,

Pre-requisites: HNM7115 - MIDWIFERY STUDIES 1: THE CHILDBEARING JOURNEY

Descriptions: Environment
- Growth & Development
- Level Two Nursery
- Equipment
- Personnel
- Influence upon the wellbeing of the baby
- Impact upon the family
- Role of the midwife in the team

Circumstances That May Require Babies To Be Admitted To A Level Two Nursery
- Pre-Term
- Post-Term
- Congenital Anomalies
- Metabolic Disturbances
- Small For Gestational Age
- Chemical Dependency
- Birth Asphyxia
- Jaundice
- Anaemia
- Birth trauma

Care of the Baby
- Gestational Assessment
- Facilitation Of Growth & Development
- Oxygenation
- Elimination
- Nutrition
- Immunity
- Temperature

Care Of The Family
- Support & counselling
- Involvement in care and decision making
- Education
- Transition to parenthood

Ethico-legal Issues
- Informed consent
- Rights of the baby
- Economic challenges
- Maintenance of life support

Neonatal Emergency Transport Service
- History of the service
- Role of the service
- Referral, stabilization and retrieval

Credit Points: 8

Learning Outcomes: On successful completion of this unit students are expected to be able to:
- Describe the development of a baby during the second half of pregnancy;
- Demonstrate understanding of the circumstances that may necessitate admission of a baby to a level two nursery;
- Evaluate the level two nursery environment and its impact upon the baby and family;
- Understand the role of the midwife within the context of the level two nursery multidisciplinary team;
- Utilise the clinical decision making process to demonstrate knowledge and understanding of the care required by the baby and the family;
- Apply evidence-based knowledge to midwifery practice;
- Demonstrate an appreciation of the family's need for privacy, dignity and respect, as well as their right to be informed and to make decision regarding care of their baby;
- Demonstrate an understanding of reflective practice in the implementation evidence informed care for the baby and family; and
- Debate the ethico-legal issues, which arise in the care of babies with special needs.

Class Contact: 60 hours theory


Assessment: Test Set topic. 20%

HNM7314 MIDWIFERY PRACTICE 6-BABIES NEED EXTRA CARE

Locations: St Albans,


Descriptions: Neonatal Nursery Environment
- Cots
- Oxygen saturation equipment
- Assisted ventilation equipment
- Monitors
- Stress management strategies

Care of the Baby
- Gestational, physical & psychosocial assessment
- Facilitation of growth & development
- Touch/stimulation/position
- Rest
- Comfort /pain control
- Kangaroo care
- Resuscitation
- Oxygenation /Oxygen therapy/CPAP/Surfactant therapy
- Oxygen saturation/Blood gases
- Nutrition & elimination
Learning Outcomes: On completion of this unit, students will be expected to:

- Demonstrate understanding of the circumstances that necessitate admission of a baby to a Level Two Nursery;
- Develop competency within the context of the multidisciplinary Health Care Team;
- Utilise a clinical decision making process to apply the necessary knowledge and understanding required to meet the needs of the baby and family in the nursery;
- Apply strategies for maintaining the families need for privacy, dignity and respect, as well as their right to be informed and to make decision regarding care of their baby;
- Facilitate family involvement with the care of the baby with special needs;
- Employ reflective practice and implement evidence based care for babies and their families;
- Facilitate transition of the baby and family from hospital to home;
- Apply evidence-based knowledge to midwifery practice with the sick baby;
- Document the ongoing relationship with woman and her family that the midwifery student follows through in a way that reflects their own involvement and actions and the rationale for these, as well as the families actions and attitudes and responses to midwifery care; and
- Follow through of a sick baby.

Class Contact: Block clinical placement of 120 hours


Drug Calculation Test: Satisfactory / Unsatisfactory

On completion of this unit, students will be expected to:

- Demonstrate the application of knowledge acquired through related theoretical and skills based subjects;
- Adapt knowledge of health assessment procedures to the individualised care requirements of with woman who is childbearing and newborns;
- Demonstrate safe clinical practice in accordance with ANMC competency standards, and consistent with level, knowledge and performance of a graduate midwife at beginning level;
- Implement individualised midwifery care for childbearing with woman acknowledging physical/mental condition, communication needs and socio-cultural background;
- Demonstrate appropriate interpersonal skills with woman during childbearing and her family, and healthcare personnel;
- Apply legal and ethical principles to the midwifery care requirements of childbearing with woman;
- Participate in reflective practice process through documentation, discussion, self-evaluation of both on-campus and clinical learning experiences and the relationship between them;
- Apply evidence-based knowledge to midwifery practice;
- Critically apply relevant theoretical concepts from related areas of study in the analysis of midwifery situations; and
- Incorporate current research findings into midwifery practice.

Class Contact: Block clinical placement of 208 hours


Assessment: Practice assessment based on ANMC Competency Standards: Satisfactory Unsatisfactory3 Reflective journals: Satisfactory/Unsatisfactory

HSD1114 INTRODUCTION TO HEALTH ASSESSMENT STUDIES

Locations: St Albans,
Pre-requisites: Nil.

Descriptions: Topic content in this subject includes:

- Comprehensive health assessment techniques
- Professional reading, analytical and writing skills; Academic referencing and styles of writing (APA format)
- Library skills including accessing internet facilities for study and research purposes
- Seminar and conference preparations, presentation techniques and skills.

Credit Points: 12
Learning Outcomes: On completion of this subject, students should be able to:

- Demonstrate beginning health assessment skills
- Utilise interpersonal and professional communication skills required for interviewing for health assessment
- Incorporate the principles of occupational health and safety to the practice of nursing health assessment
- Integrate the relevant cultural issues associated with the conduct of health assessment
- Document health assessment data clearly and accurately
- Develop skills in tertiary study techniques.
- Identify their learning and study needs to formulate individualised educational goals
- Develop knowledge and understanding in advanced computer skills for tertiary study.

Class Contact: Equivalent of 32 hours organised according to teaching mode used.


Assessment: Assignment Written synopsis utilising library resources 50%