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MASTER OF ENGINEERING SCIENCE IN MICRO/ NANO-ELECTRONIC ENGINEERING

COURSE CODE: EMMN

The micro and nano electronics engineer today is faced with many challenges brought about by the rapid advances in computers, multimedia and wireless networking technology. The Master of Engineering Science course in Micro and Nano Electronic Engineering 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 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. The specific aims of the course are to: provide an integrated foundation for electrical disciplinary studies and course specialisation into the area of micro and nano electronics; develop the advanced technical skills necessary to master state of the art micro/nano electronic design and implementation; cultivate logical and lateral thinking that leads to creation and innovation in the pursuit of solutions to engineering problems.

WHERE DO I STUDY?
The course is located at the Footscray Park Campus.

WHAT DO I GET WHEN I FINISH STUDY?
When you complete your postgraduate study, you can pursue a career in senior positions in micro or nano electronic engineering industries.

WHAT IS THE COURSE STRUCTURE AND WHAT IS INVOLVED
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. A unit is worth 12 credit points and all 8 units must be completed. 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. The course aims to produce engineers with the necessary skills and practical experience to satisfy the requirements of the micro/nano electronics industry.

**CORE UNITS OF STUDY SEMESTER ONE**
VEH6002 IC DESIGN
VEH6003 EDA TOOLS AND DESIGN METHODOLOGY
VEH6001 HDL AND HIGH LEVEL SYNTHESIS
VEH6009 RELIABILITY AND TESTABILITY IN IC DESIGN

**CORE UNITS OF STUDY SEMESTER TWO**
VEH6004 DIGITAL SYSTEM DESIGN
VEH6007 ADVANCED VLSI DESIGN
VEH6014 RF AND MIXED SIGNAL DESIGN
VEH6018 ANALOG AND MIXED SIGNAL DESIGN

**ASSESSMENT**
Assessment will be based on a combination of written assignments, laboratory exercises, project work, and formal examinations.

**ACADEMIC YEAR**
The normal academic year commences in Late February and extends through to the examination period in late November. There are two intakes, the first one in March and the IELTS mid-year August.

**WHAT PRE-REQUISITES DO I NEED?**
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.

**INTERNATIONAL STUDENTS**
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;
- TOEFL — a score of 580, and a Test of Written English (TWE) score of 5.5.

**FEES**
A limited number of Commonwealth Australia HECS-HELP places are available for Australia students. International students, please see the International course guide on the VU website for the most up to date fees.