Learning Outcome Verbs for AQF Levels 4-10

Prepared by
Kaye Cleary and Dr. Gayani Samarawickrema
with the Curriculum Design Team
Centre for Collaborate Learning and Teaching
Victoria University
March 2014

Published March 2014
Re-published by Connected Learning Feb 2021

Preface

This document is designed to be used across multiple disciplines in the higher education sector, at both unit and course level. Professional judgment based upon considerable experience in curriculum design and the authoritative higher education literature informed the compilation of this document.

The document provides learning outcome verbs:

- sourced from relevant AQF levels and referenced authoritative sources; and
- categorised according to cognitive, communication, creative and technical areas.

Recommendations for Developmental Learning

Consider the following when using this document:

- use an AQF level as a focus for unit learning outcomes, selecting verbs from adjacent AQF levels as appropriate (e.g. transitional units may select some verbs from the lower AQF level, while aspirational units may select some verbs from the higher AQF level);
- assign AQF levels across a discipline specialisation sequence of study from the lowest level of the AQF at that award, through to the highest AQF level of the award. For example, for an undergraduate Bachelor's degree, a discipline will span from AQF level 5 to AQF 7;
- note that lower AQF learning outcome verbs are subsumed by and provide foundations for higher AQF levels. If you cannot find a learning outcome verb at the expected AQF level, explore adjacent levels;
- contextualise learning outcome verbs according to levels of sophistication; and
- colour coding is used to readily identify the lowest AQF level at which the verb is normally applied. New learning outcome verbs are normally highlighted in bold and blue. Those highlighted in green identify research pathways from undergraduate to postgraduate study

Kaye Cleary and Dr. Gayani Samarawickrema

March 2014

Table of Contents

AQF Level 4

Certificate IV

Purpose

The Certificate IV qualifies individuals who apply a broad range of specialised knowledge and skills in varied contexts to undertake skilled work and as a pathway for further learning

Knowledge

Graduates of a Certificate IV will have ***broad factual, technical and theoretical knowledge in a specialised field of work and learning***

Skills

Will have:

- cognitive skills to identify, analyse, ***compare*** and act on information from a range of sources
- cognitive, technical and communication skills to ***apply and communicate technical solutions of a non-routine or contingency nature*** to a ***defined range of predictable and unpredictable problems***
- specialist technical skills to ***complete routine and nonroutine tasks and functions***
- communication skills to ***guide activities*** and ***provide technical advice in the area of work and learning***.

Application of Knowledge and Skills

Will demonstrate the application of knowledge and skills:

- to specialised tasks or functions in known or changing contexts
- with responsibility for own functions and outputs, and may have limited responsibility for organisation of others
- with limited responsibility for the quantity and quality of the output of others in a team within limited parameters

Cognitive:

analyse, assess, attribute, brainstorm, budget, calculate, catalogue, categorise, clarify, classify, compare, compile, discuss, examine, illustrate, locate, organise, paraphrase, prioritise, reconstruct, relate, resolve, retrieve, solve, tabulate, troubleshoot

Communication:

acknowledge, advise, articulate, clarify, collaborate, discuss, describe, exhibit, explain, guide, instruct, introduce, organise, orient, outline, present, question, recount, re-enact, report, script, sketch, storyboard, suggest, teach

Technical:

administer, apply, assemble, build, chronicle, cite, collate, construct, craft, create, demonstrate, develop, differentiate, distinguish, draft, dramatise, draw, edit, estimate, experiment, footnote, generate, graph, inspect, manipulate, measure, monitor, observe, operate, plot, prepare, produce, rank, rate, record, repair, revise, select, sketch, sequence, utilise

UNDERGRADUATE COURSES

AQF Level 5
Diploma
Purpose The Diploma qualifies individuals who apply integrated technical and theoretical concepts in a broad range of contexts to undertake advanced skilled or paraprofessional work and as a pathway for further learning.
Knowledge Graduates of a Diploma will have ***technical and theoretical knowledge and concepts***, with ***depth in some areas*** within a field of work and learning
Skills Will have: • cognitive and communication skills to identify, analyse, ***synthesise*** and act on information from a range of sources • cognitive, technical and communication skills to ***analyse, plan, design and evaluate approaches to unpredictable problems and/or management requirements*** • specialist technical and ***creative skills*** to ***express ideas and perspectives*** • communication skills to ***transfer knowledge and specialised skills to others*** and ***demonstrate understanding of knowledge***
Application of Knowledge and Skills Will demonstrate the application of knowledge and skills: • with depth in some areas of specialisation, in known or changing contexts • to transfer and apply theoretical concepts and/or technical and/or creative skills in a range of situations • with personal responsibility and autonomy in performing complex technical operations with responsibility for own outputs in relation to broad parameters for quantity and quality • with initiative and judgement to organise the work of self and others and plan, coordinate and evaluate the work of teams within broad but generally well-defined parameters
Cognitive: adapt, analyse, assess, attribute, budget, calculate, catalogue, categorise, classify, compare, contrast, coordinate, determine, diagnose, discuss, elaborate, evaluate, examine, extrapolate, formulate, integrate, interpret, investigate, locate, modify, organise, paraphrase, prioritise, quantify, reconstruct, relate, retrieve, review, role-play, solve, substantiate, summarise, synthesise, tabulate, troubleshoot, verify
Communication: advise, articulate, clarify, collaborate, discuss, exemplify, explain, guide, introduce, manage, orient, present, propose, question, re-enact, report, script, translate
Creative: analogise, brainstorm, choreograph, compose, depict, design, devise, dramatise, engineer, exhibit, fabricate, fashion, illustrate, imagine, initiate, plan, optimise, sketch, storyboard
Technical: adjust, administer, apply, assemble, build, budget, cite, craft, create, demonstrate, develop, differentiate, distinguish, embellish, employ, estimate, experiment, extend, footnote, generate, graph, inspect, journal, locate, manipulate, measure, monitor, observe, operate, plot, practise, prepare, record, repair, revise, schedule, sequence

AQF Level 6
Advanced Diploma
Purpose The Advanced Diploma qualifies individuals who apply specialised knowledge in a range of contexts to undertake advanced skilled or paraprofessional work and as a pathway for further learning
Knowledge Graduates of an Advanced Diploma will have specialised and ***integrated technical and theoretical knowledge*** with ***depth within one or more fields of work and learning***
Skills Will have: • cognitive and communication skills to identify, analyse, synthesise and act on information from a range of sources • cognitive and communication skills to ***transfer knowledge and skills to others*** and to ***demonstrate understanding of specialised knowledge*** with ***depth in some areas*** • cognitive and communication skills to ***formulate responses to complex problems*** • ***wide-ranging specialised technical, creative or conceptual skills to express ideas and perspectives***
Application of Knowledge and Skills Will demonstrate the application of knowledge and skills: • with depth in areas of specialisation, in contexts subject to change • with initiative and judgment in planning, design, technical or management functions with some direction • to adapt a range of fundamental principles and complex techniques to known and unknown situations • across a broad range of technical or management functions with accountability for personal outputs and personal and team outcomes within broad parameters
Cognitive: adapt, analyse, adjudicate, annotate, appraise, arbitrate, argue, assess, attribute, authenticate, calculate, challenge, conceptualise, conclude, contextualise, contrast, critique, debrief, decode, deduce, defend, deliberate, derive, determine, diagnose, discriminate, engineer, evaluate, exemplify, extrapolate, formulate, illustrate, infer, integrate, interpret, investigate, judge, justify, map, mediate, modify, optimise, prescribe, probe, propose, qualify, quantify, recommend, reflect, reconstruct, relate, resolve, review, scrutinise, solve, substantiate, survey, synthesise, troubleshoot, test, verify
Communication: advise, argue, articulate, analogise, collaborate, construe, consult, convince, co-operate, co-ordinate, debate, discourse, elaborate, elicit, exemplify, exhibit, negotiate, network, persuade, present, question, report, role-play, summarise, translate
Creative: adapt, allegorise, brainstorm, compose, choreograph, design, devise, exhibit, fabricate, fashion, initiate, map, modify, plan, role-play, scope, strategise, storyboard, transform
Technical: apply, budget, calculate, catalogue, cite, clarify, classify, compare, compute, create, demonstrate, develop, differentiate, distinguish, discuss, dramatise, elaborate, embellish, employ, estimate, experiment, explain, footnote, graph, inspect, locate, manipulate, manage, monitor, illustrate, observe, operate, organise, paraphrase, plot, prioritise, retrieve, revise, schedule, sketch, tabulate

AQF Level 6

Associate Degree

Purpose

The Associate Degree qualifies individuals who apply underpinning technical and theoretical knowledge in a range of contexts to undertake paraprofessional work and as a pathway for further learning

Knowledge

Graduates of an Associate Degree will have ***broad*** theoretical and technical knowledge with ***some depth in the underlying principles and concepts in one or more disciplines***

Skills

Will have:

- cognitive skills to identify, analyse and ***evaluate information and concepts from a range of sources***
- cognitive, technical and ***creative*** thinking skills to demonstrate a broad understanding of knowledge and ideas with ***some depth in a discipline***
- cognitive, communication and ***analytical skills*** to ***interpret and transmit responses to sometimes complex problems***
- communication skills to ***make a clear and coherent presentation of knowledge and ideas*** with some ***intellectual independence***

Application of Knowledge and Skills

Will demonstrate the application of knowledge and skills:

- with initiative and judgement in planning, problem solving and decision making in paraprofessional practice
- to adapt knowledge and skills in a range of contexts and/or for further studies in one or more disciplines
- to adapt fundamental principles, concepts and techniques to known and unknown situations
- with responsibility and accountability for own learning and work and in collaboration with others within broad parameters

Cognitive:
adapt, adjudicate, analyse, annotate, appraise, arbitrate, argue, assess, attribute, authenticate, calculate, challenge, compare, conceptualise, conclude, contextualise, contrast, critique, debrief, decode, deduce, defend, deliberate, derive, determine, diagnose, discriminate, engineer, evaluate, exemplify, extrapolate, formulate, infer, integrate, interpret, investigate, judge, justify, map, mediate, modify, optimise, prescribe, probe, propose, prove, qualify, quantify, recommend, reconstruct, reflect, relate, resolve, review, scrutinise, solve, substantiate, survey, troubleshoot, test, verify

Communication:
advise, analogise, argue, articulate, collaborate, construe, consult, convince, co-operate, co-ordinate, debate, discourse, elaborate, elicit, exemplify, exhibit, negotiate, network, persuade, present, question, report, role-play, summarise, translate

Creative:
adapt, allegorise, brainstorm, choreograph, compose, design, devise, fabricate, fashion, initiate, modify, plan, role-play, scope, strategise, storyboard, transform

Technical:
apply, budget, catalogue, cite, clarify, classify, calculate, compute, create, demonstrate, develop, differentiate, discuss, distinguish, dramatise, elaborate, embellish, employ, estimate, experiment, explain, footnote, graph, inspect, locate, manipulate, manage, monitor, illustrate, observe, organise, paraphrase, plot, prioritise, retrieve, revise, schedule, sketch, synthesise, tabulate

AQF Level 7
Bachelor Degree
Purpose The Bachelor Degree qualifies individuals who apply a broad and coherent body of knowledge in a range of contexts to undertake professional work and as a pathway for further learning
Knowledge Graduates of a Bachelor Degree will have a ***broad and coherent body of knowledge***, with depth in the underlying principles and concepts in one or more disciplines ***as a basis for independent lifelong learning***
Skills Will have: • cognitive skills to ***review critically,*** analyse***, consolidate and synthesise*** knowledge • cognitive and technical skills to ***demonstrate a broad understanding of knowledge with depth in some areas*** • cognitive and ***creative skills*** to ***exercise critical thinking and judgement*** in ***identifying and solving problems*** with ***intellectual independence*** • communication skills to present a ***clear, coherent and independent exposition*** of knowledge and ideas
Application of Knowledge and Skills Will demonstrate the application of knowledge and skills: • with initiative and judgement in planning, problem solving and decision making in professional practice and/or scholarship • to adapt knowledge and skills in diverse contexts • with responsibility and accountability for own learning and professional practice and in collaboration with others within broad parameters
Cognitive: analyse, annotate, appraise, arbitrate, argue, assess, authenticate, challenge, commentate, conclude, corroborate, critique, critically review, critically reflect, conceptually map, contextualise, cross-examine, decode, debrief, deduce, defend, deliberate, derive, discriminate, diagnose, dispute, distil, extrapolate, forecast, hypothesise, infer, interpret, inquire, interrogate, investigate, justify, mediate, predict, prescribe, probe, propose, prove, qualify, quantify, rationalise, recommend, reconstruct, reflect, resolve, substantiate, survey, validate
Communication: advocate, adjudicate, allegorise, argue, construe, consult, conciliate, convince, debate, discourse, elicit, elucidate, exemplify, extrapolate, negotiate, network, persuade, report, role-play
Creative: adapt, brainstorm, choreograph, compose, devise, initiate, role-play, scope, strategise, transform
Technical: adapt, advise, analyse, analogise, articulate, attribute, budget, brainstorm, clarify, collaborate, compute, compose, conceptualise, construct, construe, consult, coordinate, design, determine, devise, dramatise, engineer, evaluate, exhibit, experiment, fabricate, formulate, initiate, integrate, judge, manage, modify, negotiate, monitor, modify, plan, present, prioritise, query, question, review, scrutinise, storyboard, substantiate, synthesise, tabulate, test, translate, troubleshoot, verify

AQF Level 8
Bachelor of Honours Degree
Purpose The Bachelor Honours Degree qualifies individuals who apply a body of knowledge in a specific context to undertake professional work and as a pathway for research and further learning
Knowledge Graduates of a Bachelor Honours Degree will have ***coherent and advanced*** knowledge of the underlying principles and concepts in one or more disciplines and ***knowledge of research principles and methods***
Skills Will have: • cognitive skills to review, analyse, consolidate and synthesise knowledge to identify and ***provide solutions to complex problems*** with ***intellectual independence*** • cognitive and technical skills to demonstrate ***a broad understanding of a body of knowledge*** and ***theoretical concepts with advanced understanding in some areas*** • cognitive skills to exercise ***critical thinking and judgement in developing new understanding*** • ***technical skills to design and use research in a project*** • communication skills to ***present a clear and coherent exposition of knowledge and ideas to a variety of audiences***
Application of Knowledge and Skills Will demonstrate the application of knowledge and skills: • with initiative and judgement in professional practice and/or scholarship • to adapt knowledge and skills in diverse contexts • with responsibility and accountability for own learning and practice and in collaboration with others within broad parameters • to plan and execute project work and/or a piece of research and scholarship with some independence
Cognitive: analyse, arbitrate, argue, authenticate, commentate, critically review, critique, cross-examine, conceptually map, corroborate, deconstruct, deduce, derive, dispute, explicate, hypothesise, infer, interpret, interrogate, justify, posit, postulate, propose, qualify, rationalise, recommend, resolve, reverse-engineer, theorise, triangulate, validate
Communication: advocate, argue, canvass, conclude, convince, debate, discourse, distil, elucidate, exemplify, interview, persuade, present
Creative: compose, devise, hypothesise, innovate
Technical: adapt, allegorise, annotate, appraise, attribute, challenge, collaborate, compute, contextualise, defend, deliberate, design, diagnose, discriminate, elicit, estimate, evaluate, exhibit, experiment, extrapolate, forecast, formulate, judge, modify, monitor, implement, infer, inquire, interview, investigate, plan, predict, present, probe, prove, qualify, quantify, query, question, reconstruct, re-model, scope, solve, substantiate, survey, test, translate, troubleshoot, verify

POSTGRADUATE COURSES

AQF Level 8
Graduate Certificate
Purpose The Graduate Certificate qualifies individuals who apply a body of knowledge in a range of contexts to undertake professional/highly skilled work and as a pathway for further learning
Knowledge Graduates of a Graduate Certificate will have ***specialised*** knowledge within a systematic and coherent body of knowledge that may include the acquisition and application of knowledge and skills in a new or existing discipline or professional area
Skills Will have • cognitive skills to review, analyse, consolidate and synthesise knowledge and identify and provide solutions to complex problems • cognitive skills to think critically and to generate and evaluate complex ideas • specialised technical and creative skills in a field of highly skilled and/or professional practice • communication skills to demonstrate an understanding of theoretical concepts • communication skills to transfer complex knowledge and ideas to a variety of audiences
Application of Knowledge and Skills Will demonstrate the application of knowledge and skills: • to make high level, independent judgements in a range of technical or management functions in varied specialised contexts • to initiate, plan, implement and evaluate broad functions within varied specialised technical and/or creative contexts • with responsibility and accountability for personal outputs and all aspects of the work or function of others within broad parameters
Cognitive: analyse, analyse, appraise, arbitrate, argue, assess, authenticate, challenge, conceptually map, conclude, consult, contextualise, corroborate, critically review, critique, cross-examine, decode, deconstruct, deduce, defend, deliberate, derive, diagnose, discriminate, dispute, evaluate, forecast, formulate, infer, inquire, interpret, interrogate, justify, mediate, optimise, predict, prescribe, probe, propose, prove, qualify, rationalise, recommend, reflect, resolve, strategise, validate
Communication: advise, adapt, adjudicate, advocate, allegorise, analogise, appraise, argue, articulate, canvass, conciliate, construe, convince, debate, distil, discourse, discuss, elucidate, exemplify, extrapolate, exhibit, network, persuade, report, translate
Creative: adapt, compose, devise, exhibit, generate, fabricate, modify, role-play, scope, transform
Technical: advise, adapt, annotate, assess, attribute, authenticate, brainstorm, budget, clarify, collaborate, compute, conceptualise, consult, coordinate, create, design, determine, dramatise, engineer, fabricate, formulate, illustrate, initiate, implement, judge, manage, monitor, negotiate, observe, plan, present, quantify, question, reconstruct, review, revise, schedule, scrutinise, solve, storyboard substantiate, synthesise, test, troubleshoot, verify

AQF Level 8
Graduate Diploma
Purpose The Graduate Diploma qualifies individuals who apply a body of knowledge in a range of contexts to undertake professional/highly skilled work and as a pathway for further learning
Knowledge Graduates of a Graduate Diploma will have ***advanced*** knowledge within a systematic and coherent body of knowledge that may include the acquisition and application of knowledge and skills in a new or existing discipline or professional area
Skills Will have • cognitive skills to review, analyse, consolidate and synthesise knowledge and identify and provide solutions to complex problems • cognitive skills to think critically and to generate and evaluate complex ideas • specialised technical and creative skills in a field of highly skilled and/or professional practice • communication skills to demonstrate an understanding of theoretical concepts • communication skills to transfer complex knowledge and ideas to a variety of audiences
Application of Knowledge and Skills Will demonstrate the application of knowledge and skills: • to make high level, independent judgements in a range of technical or management functions in varied specialised contexts • to initiate, plan, implement and evaluate broad functions within varied specialised technical and/or creative contexts • with responsibility and accountability for personal outputs and all aspects of the work or function of others within broad parameters
Cognitive: analyse, analyse, appraise, arbitrate, argue, assess, authenticate, challenge, conceptually map, conclude, consult, contextualise, corroborate, critically review, critique, cross-examine, decode, deconstruct, deduce, defend, deliberate, derive, diagnose, discriminate, dispute, evaluate, forecast, formulate, infer, inquire, interpret, interrogate, justify, mediate, optimise, predict, prescribe, probe, propose, prove, qualify, rationalise, recommend, reflect, resolve, strategise, validate
Communication: advise, adapt, adjudicate, advocate, allegorise, analogise, appraise, argue, articulate, canvass, conciliate, construe, convince, debate, distil, discourse, discuss, elucidate, exemplify, extrapolate, exhibit, network, persuade, report, translate
Creative: adapt, compose, devise, exhibit, generate, fabricate, modify, role-play, scope, transform
Technical: advise, adapt, annotate, assess, attribute, authenticate, brainstorm, budget, clarify, collaborate, compute, conceptualise, consult, coordinate, create, design, determine, dramatise, engineer, fabricate, formulate, illustrate, initiate, implement, judge, manage, monitor, negotiate, observe, plan, present, quantify, question, reconstruct, review, revise, schedule, scrutinise, solve, storyboard substantiate, synthesise, test, troubleshoot, verify

AQF Level 9
Masters Degree (Research)
Purpose The Masters Degree (Research) qualifies individuals who apply an advanced body of knowledge in a range of contexts for ***research and scholarship and*** as a pathway for further learning
Knowledge Graduates of a Masters Degree (Research) will have: • a body of knowledge that includes the understanding of recent developments in ***one or more disciplines*** • ***advanced*** knowledge of research principles and methods applicable to the field of work or learning
Skills Will have • cognitive skills to demonstrate mastery of theoretical knowledge and to reflect critically on theory ***and its application*** • cognitive, technical and creative skills to investigate, analyse and synthesise complex information, problems, concepts and theories and to apply established theories to different bodies of knowledge or practice • cognitive, technical and creative skills to generate and evaluate complex ideas and concepts at an abstract level • ***cognitive and technical skills to design, use and evaluate research and research methods*** • communication and technical skills ***to present a coherent and sustained argument and to disseminate research results*** to specialist and non-specialist audiences • technical and communication skills to design, evaluate, implement, analyse, theorise and disseminate research that makes a contribution to ***knowledge***
Application of Knowledge and Skills Will demonstrate the application of knowledge & skills: • with creativity and initiative to new situations and/or for further learning • with high level personal autonomy and accountability • to plan and execute a substantial ***piece of research***
Cognitive: abstract, analyse, arbitrate, authenticate, commentate, conceptually map, corroborate, critically reflect, critically review, critique, cross-examine, decode, deconstruct, deduce, derive, dispute, explicate, generalise, hypothesise, infer, interpret, interrogate, justify, mediate, posit, postulate, propose, recommend, resolve, theorise, triangulate, validate
Communication: advocate, argue, conclude, construe, convince, debate, discourse, distil, elucidate, interview, persuade
Creative: devise, innovate, interpret, hypothesise,
Technical: adapt, allegorise, appraise, canvass, challenge, compose, contextualise, corroborate, defend, deliberate, design, diagnose, discriminate, evaluate, exemplify, exhibit, experiment, extrapolate, formulate, implement, infer, inquire, interview, investigate, judge, modify, predict, present, probe, prove, qualify, quantify, rationalise, resolve, reverse-engineer, scope, substantiate, survey, translate, verify

AQF Level 9
Masters Degree (Coursework)
Purpose The Masters Degree (Coursework) qualifies individuals who apply an advanced body of knowledge in a range of contexts for ***professional practice or scholarship*** and as a pathway for further learning
Knowledge Graduates of a Masters Degree (Coursework) will have: • a body of knowledge that includes the understanding of recent developments in a discipline ***and/or area of*** professional practice • knowledge of research principles and methods applicable to ***a field of work and/or learning***
Skills Will have • cognitive skills to demonstrate mastery of theoretical knowledge and to reflect critically on theory ***and professional practice or scholarship*** • cognitive, technical and creative skills to investigate, analyse and synthesise complex information, problems, concepts and theories and to apply established theories to different bodies of knowledge or practice • cognitive, technical and creative skills to generate and evaluate complex ideas and concepts at an abstract level • communication and technical ***research*** skills to ***justify and interpret theoretical propositions, methodologies, conclusions and professional decisions*** to specialist and non-specialist audiences • technical and communication skills to design, evaluate, implement, analyse and theorise about developments that contribute to ***professional practice or scholarship***
Application of Knowledge and Skills Will demonstrate the application of knowledge & skills: • with creativity and initiative to new situations ***in professional practice*** and/or for further learning • with high level personal autonomy and accountability • to plan and execute a substantial ***research-based project, capstone experience and/or piece of scholarship***
Cognitive: abstract, adapt, analyse, arbitrate, commentate, conceptually map, construe, corroborate, critically review, critically reflect, critique, cross-examine, debrief, deconstruct, deduce, derive, dispute, evaluate, generalise, hypothesise, infer, interpret, interrogate, investigate, justify, probe, recommend, theorise, validate
Communication: advocate, adjudicate, argue, canvass, conciliate, conclude, convince, debate, deliberate, elucidate, exemplify, explicate, interview, mediate, persuade
Creative: abstract, compose, devise, innovate, resolve, transform
Technical: adapt, advise, allegorise, analogise, appraise, argue, articulate, assess, authenticate, challenge, clarify, commentate, compose, construe, contextualise, convince, corroborate, debate, defend, design, devise, diagnose, discriminate, dispute, evaluate, exhibit, experiment, extrapolate, formulate, implement, infer, inquire, interview, investigate, judge, modify, negotiate, predict, prescribe, propose, qualify, quantify, rationalise, resolve, scope, substantiate, survey, triangulate, troubleshoot, translate, verify

AQF Level 9
Masters Degree (Extended)
Purpose The Masters Degree (Extended) qualifies individuals who apply an advanced body of knowledge in a range of contexts for professional practice and as a pathway for further learning
Knowledge Graduates of a Masters Degree (Extended) will have: • a body of knowledge that includes the extended understanding of recent developments in a discipline ***and its*** professional practice • knowledge of research principles and methods applicable to the ***discipline and its professional practice***
Skills Will have • cognitive skills to demonstrate mastery of theoretical knowledge and to reflect critically on theory ***and professional practice*** • cognitive, technical and creative skills to investigate, analyse and synthesise complex information, problems, concepts and theories and to apply established theories to different bodies of knowledge or practice • cognitive, technical and creative skills to generate and evaluate complex ideas and concepts at an abstract level • communication and technical ***research*** skills to ***justify and interpret theoretical propositions, methodologies, conclusions and professional decisions*** to specialist and non-specialist audiences • technical and communication skills to design, evaluate, implement, analyse and theorise about developments that contribute to ***professional practice***
Application of Knowledge and Skills Will demonstrate the application of knowledge & skills: • with creativity and initiative to new situations ***in professional practice*** and/or for further learning • with high level personal autonomy and accountability • to plan and execute a substantial ***research-based project, capstone experience and/or piece of scholarship***
Cognitive: abstract, adapt, analyse, arbitrate, commentate, conceptually map, construe, corroborate, critically review, critically reflect, critique, cross-examine, debrief, deconstruct, deduce, derive, dispute, evaluate, generalise, hypothesise, infer, interpret, interrogate, investigate, justify, posit, postulate, probe, recommend, theorise, validate
Communication: advocate, adjudicate, argue, canvass, conciliate, conclude, convince, debate, deliberate, elucidate, exemplify, explicate, interview, mediate, persuade
Creative: abstract, compose, devise, innovate, resolve, transform
Technical: adapt, advise, allegorise, analogise, appraise, argue, articulate, assess, authenticate, challenge, clarify, commentate, compose, construe, contextualise, convince, corroborate, debate, defend, design, devise, diagnose, discriminate, dispute, evaluate, exhibit, experiment, extrapolate, formulate, implement, infer, inquire, interview, investigate, judge, modify, negotiate, predict, prescribe, propose, qualify, quantify, rationalise, resolve, scope, substantiate, survey, triangulate, troubleshoot, translate, verify

AQF Level 10
Doctoral Degree
Purpose The Doctoral Degree qualifies individuals who apply a ***substantial*** body of knowledge ***to research, investigate and develop new knowledge in one or more fields of investigation, scholarship*** or professional practice.
Knowledge Graduates of a Doctoral Degree will have: • a ***substantial*** body of knowledge ***at the frontier of a field of work or learning, including knowledge that constitutes an original contribution*** • ***substantial*** knowledge of research principles and methods applicable to the ***field of work or learning***
Skills Will have • cognitive skills to demonstrate ***expert understanding*** of theoretical knowledge and to reflect critically on ***that*** theory ***and practice*** • ***cognitive skills and use of intellectual independence to think critically, evaluate existing knowledge and ideas, undertake systematic investigation and reflect on theory and practice to generate original knowledge*** • ***expert technical and creative skills applicable to the field of work or learning*** • ***communication skills to explain and critique theoretical propositions, methodologies and conclusions*** • ***communication skills to present cogently a complex investigation of originality or original research for external examination against international standards and to communicate results to peers and the community*** • ***expert skills to design, implement, analyse, theorise and communicate research that makes a significant and original contribution to knowledge and/or professional practice***
Application of Knowledge and Skills Will demonstrate the application of knowledge & skills: • with intellectual independence • with initiative and creativity ***in*** new situations and/or for further learning • with ***full responsibility*** and accountability ***for personal outputs*** • to plan and execute ***original*** research- • ***with the ongoing capacity to generate new knowledge, including in the context of professional practice***
Cognitive: abstract, critically reflect, decode, deconstruct, generalise, interpret, mediate, theorise
Communication: conclude, deliberate, elucidate
Creative: innovate, interpret
Technical: advocate, analyse, appraise, arbitrate, argue, conceptually map, convince, corroborate, critically review, critique, cross-examine, deconstruct, deduce, derive, design, devise, discriminate, dispute, evaluate, experiment, extrapolate, hypothesise, infer, interrogate, interview, justify, persuade, probe, prove, recommend, research, substantiate, survey, systematically investigate, triangulate, validate, verify

APPENDICES

Development of this Resource

This document is in keeping with TEQSA's regulatory role to ensure all universities and the courses they offer meet AQF standards. TEQSA determines whether the learning outcomes of a course are at an appropriate level by systematically

> - comparing the stated learning outcomes for a given course with the specified learning outcomes for the relevant AQF level and qualification type descriptor, and;
> - assessing whether the design of all the components of the course will support achievement of the learning outcomes.
>
> TEQSA (2013, p.3)

Purpose:

To identify AQF-levelled learning outcome (LO) verbs appropriate to VU College courses (and their constituent units).

Process:

1. Commenced with "AQF qualification type learning outcome descriptors" for Levels 4-10 as defined by the AQF 2nd edition (January 2013), pp.15-17.
2. Examination of the skills clusters included in descriptors revealed five categories of learning outcomes. These derived categories, "cognitive", "communication", "creative" and "technical", were used to group LO verbs.
3. Learning Outcome (LO) verbs were sourced from:
    a. the relevant AQF level "Purpose", "Knowledge", "Skills" and "Application of knowledge and skills" rows; and
    b. a number of authoritative sources (see the reference list) were consulted to generate the LO verbs.
4. LO verb definitions were verified by consulting Merriam-Webster, a freely accessible, authoritative, generalist dictionary. Retrieved from http://www.merriam-webster.com/
5. Verbs in the lower AQF levels become subsumed by, and provide the foundation for higher AQF levels. See "interpret" as an example. This process is similar to that noted by the Iowa State University Center for Excellence in Teaching – one of our source documents.

    > "Although the Cognitive Process and Knowledge dimensions are represented as hierarchical steps, the distinctions between categories are not always clear cut. For example… an objective that involves analyzing or evaluating may require thinking skills that are no less complex than one that involves creating. It is generally understood, nonetheless, that lower order thinking skills are subsumed by, and provide the foundation for higher order thinking skills."

6. Professional judgement was used to assign LO verbs to the AQF levels and to categorise them into one or more of the five categories.
    a. LO verb sequencing from lower to higher AQF levels. Verbs were normally categorised as one (or more) of "cognitive", "communication" or "creative" on entry before being reassigned to a "technical" category, and finally removed from the list of verbs. See "articulate" as an example through levels 4, 5, 6, 7, 8, and 9.
        i. This sequence assumes that students will develop and demonstrate their achievement of the action over one to two years. After this time, the actions become more of an underlying process to be deployed; reassigned to the "technical" category leaving the original categories for higher order version of those LO verbs. Finally, the LO verb is superseded, and dropped as important for consideration in subsequent years of study.
    b. Two mechanisms were used to highlight key terms.

i. Commencing with AQF 5, new LO verbs (those not included in the lower AQF level) were highlighted (**bold and blue**) to readily identify the lowest AQF level at which that verb is normally applied.
ii. Key differentiating terms in the AQF level "Purpose", "Knowledge", "Skills" and "Application of knowledge and skills" rows are highlighted (***bold and italic***) for quick identification of the context in which the LO verbs are to be demonstrated by the learners.

7. A limited number of LO verbs remain in one category only because the expectations of student outcomes increase in sophistication from the lower to higher AQF levels informed by the key differentiating terms referred to in 6.b.ii, mirroring the SOLO taxonomy structure. For example "interpret" refers to a relatively superficial interpretation of content at a single document level at AQF 4 through to interpretation of synthesised single-concept documents, relational interpretations between multiple single-concept, but not yet integrated issues, interpretation of structurally integrated, multi-concept issues, interpretation of analysed data, interpretations of analysed, structurally-integrated multi-concept issues that provide recommendations based on conclusions; and the interpretation of analysed data as a basis for the generation of hypothesis-style statements, or critical reflections leading to further theorisation.

Issues for consideration when using the document:

8. The document is designed to be used across multiple disciplines,
    a. Some verbs will have different definitions and cognitive/application understandings in the various disciplines. The verbs should therefore be contextualised to the relevant discipline.
    b. Some verbs will have different levels of sophistication depending on whether the unit is in a cognate or non-cognate course.
9. The document is designed to operate at both a unit of study and course level.
10. Use an AQF level as a focus for Unit LOs, selecting verbs from adjacent AQF levels as appropriate. (The AQF framework is intended to facilitate incremental learning.)

Validation of verb assignment:

- Trail with Curriculum Design staff as an in-house tool
- Validate learning outcome verbs with Coordinators at specific levels:
    - Unit
    - Course
- Validate Level 4 against a training package.
- Determine format for availability for Unit and Course Coordinators to use independently, e.g. by downloading from a Victoria University Centre for Collaborative Learning and Teaching (CCLT) web site.

In the future:

- The document will be useful not only for course and unit-level learning objectives, but as the curriculum development process evolves, the learning outcomes at a unit level should also align with assessment criteria and Victoria University graduate capabilities as well as assessment types (as listed in the Course Approvals process system).

References

Australian Qualifications Framework Council. (2013). *Australian Qualifications Framework*, 2ed ed. South Australia: The Council. Retrieved from http://www.aqf.edu.au/aqf/in-detail/2nd-ed-jan-2013/

Australian Qualifications Framework Council. (2012). *Bachelor honours degree: An explanation*. South Australia: The Council. Retrieved from http://www.aqf.edu.au/wp-content/uploads/2013/06/Bachelor-Honours-Degree-Explanation.pdf

Australian Qualifications Framework Council. (2012). *Research: An explanation*. South Australia: The Council. Retrieved from http://www.aqf.edu.au/wp-content/uploads/2013/06/Research-Explanation.pdf

Biggs, J. & Tang, C. (2011). *Teaching for quality learning at university* (4th ed) Buckingham: SRHE and Open University Press.

Churches, A. (2009). *Bloom's digital taxonomy* Retrieved from http://edorigami.wikispaces.com

European Qualifications Framework for Vocational Education and Training. (2013). *Geographical Mobility in vocational education and training: Guidelines for describing units of learning outcomes.* Retrieved from http://www.ecvet-team.eu/sites/default/files/guidelines_for_describing_units_of_learning_outcomes.pdf

Iowa State University. (2012). *A model of learning objectives.* Iowa State University Center for Excellence in Learning and Teaching. Retrieved from http://www.celt.iastate.edu/pdfs-docs/teaching/RevisedBloomsHandout.pdf

Jackson, N, Wisdom J and Shaw M, (2003). *Using learning outcomes to design a course and assess learning. The Generic Centre: Guide for busy academics*. York: Higher Education Academy. Retrieved from http://www.heacademy.ac.uk/assets/York/documents/resources/resourcedatabase/id252_Guide_for_Busy_%20Academics_Using_Learning_Outcomes_to_Design.rtf

San Diego State University. (2004). *360 action verbs for writing student learning outcome statements in higher education*. SDSU Center for Teaching & Learning. Retrieved from http://ctl.sdsu.edu/action.htm

Tertiary Education Quality and Standards Agency. (2013). TEQSA and the Australian Qualifications Framework: Questions and Answers. Canberra: TEQSA. Retrieved from http://www.teqsa.gov.au/for-providers/frequently-asked-questions-providers

Victoria University. (2013). *Using Blooms taxonomy to develop units*. Footscray Park: Curriculum Innovation Unit.