

THE UNIVERSITY OF NEWCASTLE
FACULTY OF SCIENCE AND INFORMATION TECHNOLOGY
BACHELOR OF SCIENCE - GRADUATE ATTRIBUTE MAPPING
AQF LEVEL 7 QUALIFICATION

TABLE 1: Program Outcomes (Graduate Profile Statements) and Graduate Attribute Domain

Program Outcomes	ATTRIBUTES		
	Community Responsiveness	Professionalism	Scholarship
1. Demonstrate broad coherent knowledge and academic background appropriate for professional work. In particular, demonstrate in-depth knowledge and skills in at least one field of science and a basic knowledge of at least one other field of science;		Yes	Yes
2. Work independently and collaboratively to collect, analyse and organise scientific information effectively;			Yes
3. Identify, define and analyse problems using scientific method to form and test hypotheses; to apply statistical principles and logic; and to use appropriate tools for problem solving;		Yes	Yes
4. Report scientific findings in written, visual and verbal forms and to communicate a convincing and reasoned scientific argument at an appropriate level;	Yes		Yes
5. Apply knowledge and skills to work on a scientific activity both autonomously and collaboratively in a multidisciplinary environment with an ability to adapt to change, including new technologies and methods; and		Yes	Yes
6. Demonstrate awareness of professional practice in relevant disciplines, including an understanding, appreciation and respect for appropriate conduct and ethical practice.		Yes	

TABLE 2: Generic Skills Clusters

1. a. Oral and/or b. written communication
2. Teamwork
3. Information literacy
4. Ability to use technology
5. Problem solving
6. Ability to critically analyse

TABLE 3: AQF Level 7 Qualification Descriptors

1. Purpose	a. 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
2. Knowledge	a. 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
3. Skills	Graduates of a Bachelor Degree will have: a. cognitive skills to review critically, analyse, consolidate and synthesise knowledge b. cognitive and technical skills to demonstrate a broad understanding of knowledge with depth in some areas c. cognitive and creative skills to exercise critical thinking and judgement in identifying and solving problems with intellectual independence d. communication skills to present a clear, coherent and independent exposition of knowledge and ideas
4. Application of Knowledge and Skills	Graduates of a Bachelor Degree will demonstrate the application of knowledge and skills: a. with initiative and judgement in planning, problem solving and decision making in professional practice and/or scholarship b. to adapt knowledge and skills in diverse contexts c. with responsibility and accountability for own learning and professional practice and in collaboration with others within broad parameters

TABLE 4: (National) Discipline Threshold Learning Outcomes

Discipline Statements – Threshold Learning Outcomes For Science
<p>1. UNDERSTANDING SCIENCE Demonstrate a coherent understanding of science by:</p> <ul style="list-style-type: none"> 1.1. articulating the methods of science and explaining why current scientific knowledge is both contestable and testable by further inquiry 1.2. explaining the role and relevance of science in society.
<p>2. SCIENTIFIC KNOWLEDGE Exhibit depth and breadth of scientific knowledge by:</p> <ul style="list-style-type: none"> 2.1. demonstrating well-developed knowledge in at least one disciplinary area 2.2. demonstrating knowledge in at least one other disciplinary area.
<p>3. INQUIRY AND PROBLEM SOLVING Critically analyse and solve scientific problems by:</p> <ul style="list-style-type: none"> 3.1 gathering, synthesising and critically evaluating information from a range of sources 3.2 designing and planning an investigation 3.3 selecting and applying practical and/or theoretical techniques or tools in order to conduct an investigation 3.4 collecting, accurately recording, interpreting and drawing conclusions from scientific data.
<p>4. COMMUNICATION Be effective communicators of science by:</p> <ul style="list-style-type: none"> 4.1. communicating scientific results, information, or arguments, to a range of audiences, for a range of purposes, and using a variety of modes.
<p>5. PERSONAL AND PROFESSIONAL RESPONSIBILITY Be accountable for their own learning and scientific work by:</p> <ul style="list-style-type: none"> 5.1. being independent and self-directed learners 5.2. working effectively, responsibly and safely in an individual or team context 5.3. demonstrating knowledge of the regulatory frameworks relevant to their disciplinary area and personally practising ethical conduct.

Reference: Australian Learning and Teaching Council – Learning and Teaching Academic Standards Project – SCIENCE – Learning and Teaching, Academic Standards Statement, September 2011

TABLE 5: Learning Outcomes Mapping - Programs and Courses – PSYCHOLOGY MAJOR –

Course Code and Name	Program Outcomes	Generic Skills Clusters	AQF Level descriptors	Science Discipline Learning Outcomes	Graded (assessment) activities embedding outcome	Evidence of Learning Outcome attainment
PSYC1010 Psychology Introduction 1	1	1b, 3	2a,3a, 3d	2.1, 3.1, 4.1, 5.1	Minor written report	This assessment is designed to elicit student learning of classic and contemporary concepts, theories and evidence in psychology. The essay type report provides students the opportunity to develop skills in purposeful written communication. Students demonstrate in written form critical and reflective analysis through their evaluation of psychological concepts in lifespan development including cognitive, emotional, and social development, cross-cultural and indigenous studies in a written report summarising information and providing their own views on these topics.
	1, 3	1b, 3	2a,3a, 3b, 3d	2.1, 3.1, 4.1, 5.1	Major written report	The purpose of this assessment is to help students develop critical analysis and purposeful communication skills. Students produce a major written report on human psychology through their understanding of personalities and individual differences from broader social, cultural and cross-cultural perspectives. They collect, locate and analyse information about key factors that influence people's perceptions, thoughts, feelings, and behaviour that link various topics in psychology and justifying their claims through appropriate evidence and referencing.
	1, 3	5,6	2a,3a, 3b	2.1	Formal examination	The purpose of this assessment is to test students' developing understanding of concepts and theories of psychology. Students are assessed on their basic knowledge of psychology and psychological concepts. This requires them to identify accurate and relevant information to demonstrate their knowledge.

Course Code and Name	Program Outcomes	Generic Skills Clusters	AQF Level descriptors	Science Discipline Learning Outcomes	Graded (assessment) activities embedding outcome	Evidence of Learning Outcome attainment
PSYC1020 Psychology Introduction 2	1, 3, 4	1b, 3, 5, 6	2a, 3a, 3b, 3d	2.1, 3.4, 4.1	Essays/Written Assignments	The purpose of this assessment is to help students develop a preliminary understanding of the relationship between patient outcome data and a critical thinking diagnostic process. Students make a diagnosis from a given set of data to demonstrate an understanding of neuropsychology tests. They demonstrate an understanding of the relationship between the results of the neuropsychology tests with brain function in a written report.
	1, 3	1b, 3, 5	2a, 3a, 3d	1.1, 2.1	Online quiz	The purpose of the online quiz is to help students develop skills in writing concise short answer questions. Students are required to respond to a variety of questions in tutorial settings as well as online to demonstrate their basic knowledge, critical and reflective thinking, and write clear definitions and evaluations of key topics in psychology.
	1, 3	5,6	2a,3a,3b	2.1	Formal examination	The purpose of this assessment is to test students' developing understanding of concepts and theories of psychology. Students are assessed on their basic knowledge of psychology and psychological concepts. This requires them to identify accurate and relevant information to demonstrate their knowledge.
STAT2000 Applied Statistics and Research Methods	1, 2, 3, 4	1b, 3, 5, 6	2, 3a, 3d, 4b	2.2, 3.1, 3.2, 3.3, 4.1	Essays / Written Assignments	The purpose of this assessment is to help students develop an intermediate understanding of statistics and statistical methods. Students are assessed on their ability to collect, organise and analyse data and produce erudite reports which convey assimilated evidence-based understanding of the key statistical concepts and methodologies. Students present a written report to effectively communicate and argue the role and importance of statistical methods in the development of scientific knowledge.

Course Code and Name	Program Outcomes	Generic Skills Clusters	AQF Level descriptors	Science Discipline Learning Outcomes	Graded (assessment) activities embedding outcome	Evidence of Learning Outcome attainment
	1, 2, 3, 5	1a, 2, 4, 5	2, 3a, 4a, 4b	2.2, 3.1, 3.2, 3.3,4.1, 5.2	Group Project	<p>The group project is designed to encourage the development of collaboration skills associated with the selection and implementation of appropriate experimental and observational study designs in a practical context. Students are assessed on the nature and quality of their teamwork to select and implement appropriate standard experimental and observational study designs, collect valid data, apply statistical methods and appropriate software program to solve problems, analyse various data types, interpret results and make conclusions to answer research questions at a mid-level. Students are required to present their findings and argue their viewpoint as well as examine others viewpoints during the class group oral presentation, providing respectful and constructive feedback.</p>
	1, 3	1b, 3, 5	2, 3a, 3d	2.2, 3.3	Examination: Formal	<p>The purpose of final written examination is to test the student's ability to consolidate and present overall learning achieved from the course. Students demonstrate their intermediate knowledge of the subject matter as well as their ability to interpret, describe, problem solve, analyse and hypothesise using key statistical concepts, techniques and methods in written examinations.</p>
	1, 3	3, 5	2, 3a, 3d	2.2, 3.3	Quiz - Class	<p>The class quiz is designed to provide constructive opportunity and feedback on student knowledge acquisition and demonstrated assimilation of data. Students demonstrate their emerging understanding of statistical concepts and methods through reasoning and solving familiar and unfamiliar problems in a written examination.</p>

Course Code and Name	Program Outcomes	Generic Skills Clusters	AQF Level descriptors	Science Discipline Learning Outcomes	Graded (assessment) activities embedding outcome	Evidence of Learning Outcome attainment
PSYC2300 Cognitive Psychology	2	1b	2a	1.1	brief written lab reports	This assessment requires students to conduct replications of seminal studies in Cognitive Psychology. Students write short reports summarising the laboratory procedure and outcomes, and thus demonstrate an understanding of the scientific method, proper control conditions, statistical analysis, and the meaning of empirical results.
	2, 4	1b, 3, 5, 6	2a, 3a, 3b, 3d, 4a	2.2	full length lab report	This assessment requires students to conduct replications of a seminal study in Cognitive Psychology. Students write a full length report describing the laboratory procedure and outcomes of the experiment, thus demonstrating understanding of the scientific method, proper control conditions, statistical analysis, and the meaning of empirical results. They are assessed on their competence in understanding, critically evaluating and integrating literature. Finally, they discuss the limitations of the current design and offer future research directions.
	1	1b, 3	2a, 3a	2.1	final examination	The exam tests students' knowledge of concepts and ideas in intermediate level cognitive psychology, Students demonstrate an understanding of the psychological concepts, their ability to integrate intermediate knowledge from multiple sources, and report it a written form, clearly and concisely.

Course Code and Name	Program Outcomes	Generic Skills Clusters	AQF Level descriptors	Science Discipline Learning Outcomes	Graded (assessment) activities embedding outcome	Evidence of Learning Outcome attainment
PSYC3000 Advanced Research Methods and Statistics in Psychology	1, 2, 3, 5	1b, 5, 6	1, 2a, 3a, 3b, 3c, 3d, 4a, 4b	3.2, 4.1, 5.1, 5.3	research proposal	This assessment is designed to help students develop skills in synthesising relevant information from pertinent literature, identifying a research question, and planning a new study. Students are assessed on the quality of their literature review as well as their skills in searching data bases and using appropriate referencing software. They plan the study in groups, and present an individual written report to provide a rationale, discuss methods for data collection and analysis to demonstrate initiative and an ability to plan research in psychology. Students use their broad understanding of psychological concepts in planning the research at a senior level.
	2	1b, 4, 5	2a, 3b, 4a	1.1, 3.3, 3.4, 4.1	statistical package class test	This assessment is designed to test the students ability to use a software package. Students demonstrate their technical skills in entering data, analysing data and problem solving, using a statistical software package. They are required to interpret the statistical output in written form.
	1, 3	1b, 3, 5	2a, 3b, 4a	2.1, 2.2, 3.3	final examination	This exam tests students' advanced knowledge and understanding in research methods and statistics. Students solve problems in statistics to demonstrate their understanding, at the senior level, of statistical methods used in psychology to interpret data and draw appropriate conclusions using judgement.
PSYC3001 Advanced Psychological Measurement	1, 3	3, 5	2a, 3b	2.1	Mid semester in-class quiz	This assessment is designed to assess the students understanding of surveys. Students demonstrate knowledge and understanding, at the senior level, of the design, administration, analysis and interpretation of questionnaire, test and survey data as applied to intelligence, personality and general survey testing theory and principles.

Course Code and Name	Program Outcomes	Generic Skills Clusters	AQF Level descriptors	Science Discipline Learning Outcomes	Graded (assessment) activities embedding outcome	Evidence of Learning Outcome attainment
	6	1b, 6	2a	5.1	Critical Review Assignment	This assessment requires students to review published journal articles which report the psychometric development and testing of a measure of individual differences in a psychological construct (e.g., depression, emotional intelligence, etc). Students using their knowledge and understanding of psychometrics, at the senior level, critically review journal articles and write a report outlining the psychometric strengths and weaknesses of the research. Students demonstrate their ability to communication their understanding of psychometric techniques.
	1, 3	1b, 3, 5	2a, 3b	2.1, 2.2	Final Exam	The final exam is designed to assess an advanced understanding of psychological measurements. Students are assessed on psychometrics, factor analysis, interviewing, physiological measurements and qualitative data analysis models. In response to questions they explain, describe and problem solve at the senior level using the topics covered in the course.
	5, 6	1a, 2, 4	2a, 3b, 3d, 3c, 4a, 4c	2.1, 3.2, 3.4, 4.1, 5.2, 5.3	Survey design group project	This activity is designed to elicit student learning of survey design. Students work as a group to select a contemporary topic and design a survey that examines behaviour/attitudes of people relevant to that topic. The survey design should include a variety of question types. They collect data by administering the survey to others taking into account ethical and cultural issues. Students give an informal oral presentation to the class, using appropriate technology, to demonstrate their ability to interpret and analyse the survey data.

RESOURCES:

1. Extract from the Program Management Policy and Procedure Manual [000967]

Refer to [Section 4: Learning Outcomes, Graduate Attributes and Generic Skills](#)

Key Words for each AQF Level

AQF Level	Level 5	Level 6	Level 7	Level 8	Level 9	Level 10
Key Words to use in Graduate Profile statements	Undertake skills	Undertake paraprofessional	Apply Broad Coherent	Apply Professional Highly Skilled	Apply Advanced Specialised	Expert Substantial New Knowledge

Key Words for Each Course Level *

Typical Programs	Undergrad (AQF levels 5- 8 except Graduate Certificate and Graduate Diploma)				PG (AQF Level 8 [Grad Cert, Grad Dip and 9 [extended and coursework]	Research Higher Degrees (AQF 9 R and 10)
Course Level	1000 level (Introductory)	2000 level (mid-program)	3000 level (senior)	4000/5000 level (advanced)	6000 level (postgraduate)	9000 level (RHD)
Key Words to use in Proof of Learning Outcome attainment for each Graduate Profile statements	Introductory Foundation Elementary Preliminary Growing awareness Basic	Intermediate Mid-level	Senior <i>For 3 year programs:</i> Capstone Specialised	Advanced Capstone	Advanced Capstone	Expert Substantial New Knowledge

**Note: 1000 (introductory), 2000 (mid program), 3000 (senior) and 4000 (advanced) level courses reflect the increasing levels of knowledge, skills, and the application of knowledge and skills expected in a course.*

Courses at higher levels will have assessment tasks that require a demonstration of greater depth and breadth of knowledge and greater complexity in skills.

In general terms, assessment tasks at higher levels require more critical analysis, research skills and independent thinking than tasks at lower levels.

2. [Awards and Programs Policy Suite](#)
3. [Australian Qualifications Framework \(2011\) and its Addendum](#)
4. [Commonwealth Government's Office of Learning and Teaching – Learning and Teaching Academic Standards for Disciplines](#)