

The aligned curriculum

Curriculum or program mapping at UNE is based on the premise that effective teaching is supported by an aligned curriculum. An aligned curriculum (Biggs 1999) requires:

- clear learning outcomes
- learning experiences designed to assist student achievement of those outcomes
- carefully designed assessment tasks that allow students to demonstrate achievement of those outcomes.

1. Learning outcomes

Learning outcomes describe what students are expected to be able to do upon success in a unit. They provide a link between expectations, teaching and assessment. They begin with a strong action verb and describe specific tasks, preferably requiring students to develop higher order thinking skills.

Purposes of Outcomes

- By knowing where you intend to go, you increase the chances of you and the learner ending up there
- Guide you in the planning of instruction, delivery of instruction and evaluation of student achievement
- Guide the learner helping him/her to focus and set priorities
- Allow for analysis in terms of the levels of teaching and learning.

The three parts of a learning outcome are:

Task - What must the learner do (action verb)?

Condition - How?

Standard - How well?

Table 1: Characteristics of good unit learning outcomes

Clearly stated tasks of higher thinking abilities	They are free from jargon and complex vocabulary, and they describe specific and achievable tasks (such as ‘describe’, ‘analyse’ or ‘evaluate’) NOT vague tasks (like ‘appreciate’, ‘understand’ or ‘explore’).
Important learning goals	They describe the essential (rather than trivial) learning in the unit, which a student must achieve.
Achievable	They can be achieved within the study period and there are sufficient resources available.
Demonstrable	They can be demonstrated in a tangible way.
Measurable	They are assessable (and achievement, and quality of achievement, can be observed).
Fair and equitable	All students, including those with disabilities or constraints, have a fair chance of achieving them.

Unit learning outcomes can be pitched at **various levels of thinking**. According to Bloom’s taxonomy, assessments that require a lower order of thinking skills ask students to demonstrate only their knowledge and comprehension (often through tests of memory, for example). More demanding thinking tasks—and those more suitable to university education—require students to demonstrate application, analysis, synthesis and evaluation.

Table 2 gives a taxonomy for levels of thinking (a revised version of Bloom's 1956 taxonomy). It provides a simple framework for planning student thinking at all levels and the action words included might help when writing learning outcomes.

In curriculum mapping we use Bloom's numbered taxonomy system as an easy way to see the level of thinking required across a course and at the unit level of learning outcomes. While assessment tasks at levels 1 and 2 are acceptable, the bulk of assessments at university should aim to require students to perform at levels 3 and well beyond. Other systems or hierarchies have been developed but Bloom's taxonomy is easily understood and is probably the most widely used approach in education fields.

Practise and reinforcement of knowledge and skills

Curriculum mapping will allow you to accurately gauge what prerequisite knowledge or skills your students bring to your unit from previous units. In curriculum mapping your course team will want to identify units in which students receive further opportunities to practise and reinforce skills learnt in previous units. Formal (summative) assessment of the skill may not occur but there may be formative assessment opportunities. This means you will need to provide criteria for students to self-assess their ability as a form of feedback.

Table 2: Bloom's revised taxonomy of educational objectives

Higher order thinking



<p>6. Creating <i>Generating new ideas, products, or ways of viewing things, problem , complex application</i> <i>Actions: Designing, constructing, planning, producing, inventing, propose, modify, predict, improve, compile, forecast</i></p>
<p>5. Evaluating <i>Justifying a decision or course of action</i> <i>Actions: Checking, hypothesising, critiquing, experimenting, judging, recommend, justify, prioritize, testing, monitoring, validate, predict</i></p>
<p>4. Analysing <i>Breaking information into parts to explore understandings and relationships</i> <i>Actions: Comparing, organising, deconstructing, interrogating, finding, categorize, integrating, research, criticizing, dissect, test</i></p>
<p>3. Applying <i>Using information in another familiar situation</i> <i>Actions: Implementing, carrying out, using, executing, calculate, operate, demonstrate, solve</i></p>
<p>2. Understanding <i>Explaining ideas or concepts</i> <i>Actions: Interpreting, summarising, paraphrasing, classifying, explaining, inferring, comparing, give examples of, reviewing</i></p>
<p>1. Remembering <i>Recalling information</i> <i>Recognising, listing, describing, retrieving, naming, finding, identifying</i></p>

Adapted from Tarlinton 2003

Learning outcome domains

There are three domains of learning: knowledge, skills and attitudes. These are also termed the cognitive, psychomotor and affective domains of learning or

- Cognitive (knowing)
- Psychomotor (doing)
- Affective (feeling).

Psychomotor objectives can be vague. They can be made clearer if the criteria are included as part of the outcomes.

Outcomes in the affective domain are harder to write and they are really hard to measure. Usually that measurement involves a lot of subjectivity. The guidelines accompanying the UNE Graduate Attribute Policy states 'Where personal attributes and values cannot be certified course outcomes and teaching activities will demonstrate that students have been exposed to a broad range of perspectives, codes of conduct for the relevant profession, or role modelling.'

Table 3: Examples of verbs used in learning outcomes from the psychomotor and affective domains

Skills

adjust	assemble	chart	collect	use
draw	employ	establish	illustrate	imitate
interact	locate	maintain	measure	modify
operate	organise	rearrange	return	set up
practice	manipulate	master	fit	perform
demonstrate				

Attitudes

accept	adopt	advocate	approve	assess
challenge	characterise	choose	criticise	defend
evaluate	formulate	judge	justify	manage
model	persuade	recommend	resolve	select
specify	value	re-assure	empathise	supports
attempts	disputes,	praises	questions	shares,
volunteers	show sensitivity to	accept responsibility for	be willing to	demonstrate commitment to

http://www.nottingham.ac.uk/medical-school/tips/aims_objectives.html

How can I modify learning outcomes to make them more demanding?

Learning outcomes can be made more difficult or demanding by changing the active verb to a more complex one or by adding specific conditions or limits.

For example simple outcomes might be to list or state facts, formulae or definitions, essentially recalling information from memory and reproducing it. More complex outcomes might ask learners to apply or use knowledge in an unfamiliar context. This is more cognitively demanding and really tests whether learners have deeply understood concepts. Finally the highest levels of outcomes ask learners to solve complex problems by, for example evaluating

or analysing evidence or synthesizing information. To critically evaluate the causes of something involves not only a deep understanding of detailed factual information but also an ability to make complex judgments about the validity of evidence.

Conditions that could be added to outcomes might include modifications to the circumstances in which they are carried out. ‘Given a diagram of the inner ear correctly labels X, Y and Z’ is an easier task than having to draw a diagram from scratch. Similarly ‘describe quantitatively’ is more demanding than just ‘describe’ and ‘describe quantitatively using data from published studies’ implies a familiarity with the primary literature that only the advanced student might have. Certain outcomes can be modified by the degree to which they need to be completed. ‘Explain in detail’ is more complex than ‘outline’. Measuring to 95% accuracy is harder than simply measuring without any degree of accuracy (http://www.nottingham.ac.uk/medical-school/tips/aims_objectives.html).

A simple process for creating unit learning outcomes (Curtin 2008)

The focus is always on making the unit learning outcomes into statements which students can understand. A key to quality is that students must be absolutely clear about what they are expected to be able to do. The following is a simple strategy.

1. A student beginning your unit wants to know exactly what they will be able to know or do to be successful in the unit. Imagine you are giving a verbal response to a student’s query. Use everyday language to tell the student clearly what he or she should be able to do if they are to be successful in the unit—remember students don’t have your discipline expertise yet.

2. Drawing on your explanation, write down three or four statements which explain exactly what it is that students will be able to do when they have successfully completed the unit. Rework the statements until they are clear and concise, and **readily understandable by a person who has not yet studied the unit**. Introduce the statements with the words ‘You should be able to...’ and avoid educational jargon and complex discipline-specific terms.

3. Craft the statements into learning outcomes, still avoiding educational jargon (keep your audience in mind). Make sure each learning outcome begins with a verb which clearly describes what students will achieve. Name specific achievable tasks (such as students will be able to ‘describe’ or ‘analyse’ or ‘evaluate’) rather than vague concepts (like ‘appreciate’, ‘understand’, ‘explore’ or ‘be familiar with’). Check to see if any learning outcomes require memorising only. (For example, ‘the student will be able to list feedback strategies.’ This is an example of the lowest task level, and it is rarely appropriate in university assessment). Instead, set tasks which require higher order thinking skills: namely, analysis, synthesis and evaluation. Set them in the context in which a new graduate in the discipline might be working. [For example, writing a letter to a parent for an education student or preparing a briefing paper for a local government officer for an engineering student.]

4. Ensure that the outcomes you have listed are intellectually challenging and important, and that they measure achievement of essential rather than trivial learning. Consider whether there are too many learning outcomes—can students realistically achieve everything you have listed in one study period? If not, cull the learning outcomes until you are satisfied that all the outcomes are achievable, important and measurable. (If you still have outcomes with verbs like ‘appreciate’ and ‘understand’, consider the difficulty of assessing these outcomes—how will you ‘test’ whether students appreciate something? Change these verbs to actions which can be observed and measured.)

5. Think about how you will know when a student has achieved each learning outcome—how will you assess them? Is the learning outcome observable? For example, it is difficult to assess ‘attitudes’ but relatively easy to assess behaviours that are consistent with a desired attitude. Make sure the assessment tasks you are considering are feasible—can students produce that assessment task within the study period? Will you be able to assess the work and provide suggestions for improvement within a reasonable time frame? Will the task show you when a learning outcome has not been achieved? Will it be clear when a student has achieved an outcome at a very high level? Are the assessments tasks you have in mind fair and equitable?

6. When you are satisfied with your list of unit learning outcomes, revisit your imagined student and verbalise the learning outcomes—check that your expectations are clear including how they will be assessed. Better still, ask a colleague for feedback, and whether they agree with you that the assessments you have in mind are the best ways of ensuring that the learning outcomes have been achieved. In your unit outline, make sure students can see the learning outcomes and the assessment tasks, and how they are linked (Curtin 2008, p. 23).

2. Teaching and learning activities

Teaching activities are any approach, mode or resource material you choose for students to do or use in interacting with content to help achieve the intended learning outcomes. Teaching activities also need to be linked to your learning outcomes so that students can see the relationship between them and understand the purpose of their learning. They need to be able to see that when you have them working in small groups or teams to complete a project, for example, you are helping them learn the principles and skills of teamwork and interpersonal interaction, as well as time management and self-regulation, and that these skills will be valuable in their future careers. You might choose to use a problem-based learning approach with printed support material and web-based resources. You may choose intensive lab sessions for small groups with tutors to develop skills in using specialised equipment required in their future career. A selection of teaching activities is provided in Table 4.

A more comprehensive list that also indicates suggestions for achieving particular attributes is provided on pages 25 to 27 of the [Graduate Attributes Resource Guide](#) or pp. 17-20 in the hard copy book available from the Teaching and Learning Centre.

Table 4: Examples of teaching activities

Teacher controlled activities	Lectures, tutorials, practicals, printed study guide, demonstrations, coaching, field trips
Peer activities	Group projects (face-to-face or online), collaborative tutorial or team activities, problem-based learning, group discussions (face-to-face or online), group presentations, role play, professional work placement, brainstorming.
Independent activities	Researching, writing essays or reports, preparing case studies, self-reflection, planning, problem exercises for practicing and applying, quizzes and exams, watching CD ROM.

3. Developing appropriate assessment tasks

The principal purpose of assessment is to determine the extent to which **intended** educational outcomes are being achieved. Assessment tasks are opportunities for students to demonstrate their achievement of the unit learning outcomes and how well they have achieved them. It also gives us feedback about the success of our teaching. The powerful motivating effect of assessment requirements can be harnessed to foster learning allowing students to self-monitor, practice and receive feedback. Assessment is integral to student learning. Assessment tasks should be spaced throughout the semester, and include formative tasks (tasks which focus on improving performance) as well as summative tasks (tasks which focus on measuring performance).

Whatever assessment task you decide to use should be clearly aligned with the learning outcomes and teaching and learning activities in your unit. Use authentic professionally relevant assessment tasks that approximate those the student will need to undertake in their workplace to make it more meaningful and relevant for students. Scaffold the development of professional skills and graduate attributes so that students progressively build on their development. For example writing skills are developed over time with practice and feedback and so your assessment tasks are assessing both content and written communication skills. Across the course students will have several opportunities to re-visit a particular skill at increasing levels of complexity.

Purposes of assessment

- Determine the extent or level of achievement of intended learning outcomes
- Provide feedback to student on their progress (formative and summative)
- Provide feedback on effectiveness of teaching
- Aid learning
- Motivate student
- Accreditation.

Assessment criteria

‘Assessment criteria are statements that express in explicit terms how performance of learning outcomes might be demonstrated’ (UNE Assessment Policy 2008). They are characteristics of something, the quality of which can be judged or estimated. They provide a rationale for

grading judgements after they have been made and results given back to students. It is almost impossible to explain a particular judgement without referring to criteria.

In addition you need to describe the standard or level of attainment by using a combination of:

1. numerical cut-offs
2. tacit knowledge (lecturer's expertise)
3. verbal descriptions
4. exemplars (Sadler 2005).

In summary, assessment criteria measure if a student has achieved a learning outcome and, how well the student has achieved the learning outcome.

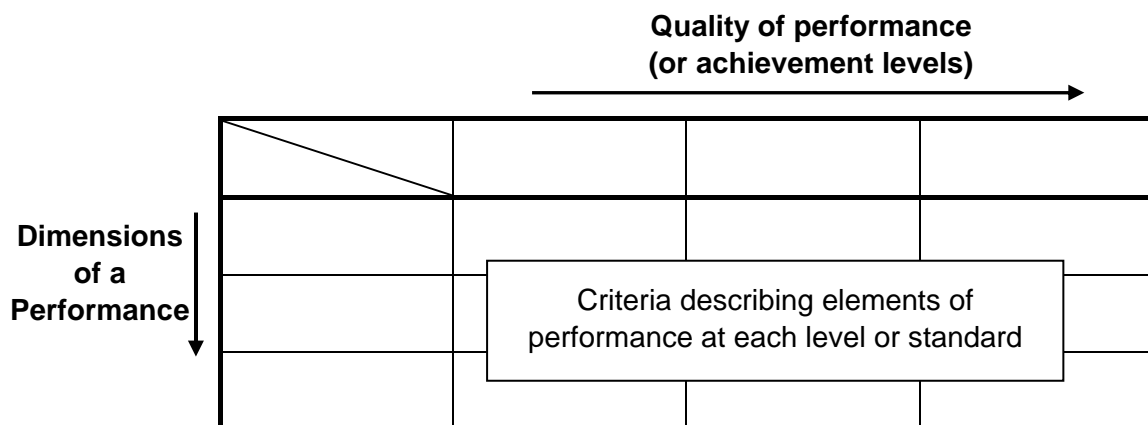
Using assessment criteria as a learning tool

Use your assessment criteria to

- annotate past students' work (with permission) to act as models for standards of expectations
- create criteria matrices for students to use as part of peer feedback. Peer feedback is a teaching activity that facilitates learning of the givers and receivers of feedback.
- convey which criteria are more important, by attaching marks to the various criteria
- create criteria sheets to help students self-assess their skills. These could even be submitted with the assignment with a mark allocated. This task promotes self-reflection and reinforces personal portfolio development and personal planning (lifelong learning).

Using a matrix to define assessment criteria

A matrix makes explicit to the student the criteria against which their work will be assessed, and can be a comprehensive and efficient feedback tool. In brief, a matrix is a table showing quality of performance on one axis, and dimensions of performance on the other.



Advantages of using a criteria matrix

A matrix

- makes assessment processes open and accountable and removes subjectivity
- provides diagnostic feedback to students and staff on students' learning so far
- helps students develop, revise and produce better quality work: they do not have to guess what the assessor is looking for because the most valued outcomes of the assessment are clear
- improves comparability and standardises assessment when there are several assessors

- can be re-used—the task or the content may change but the scoring matrix may be the same
- ensures that all of the learning outcomes are being evaluated.
- streamlines the assessment and feedback process.

Differentiating performance levels

The most difficult aspect of constructing a matrix is formulating and clearly articulating criteria for different levels of achievement (standards). Try to determine qualitative or quantitative differences that characterise achievement at the different levels. Avoid undefined terms (e.g. trivial work, good use of, significant work, professional essay), and value-laden terms (e.g. excellent or poor work—these terms may have meaning for the assessor but do not tell the student the standard expected nor what they can do to improve). The University of Newcastle [‘Rubrics for assessment’](#) website has useful information and examples to download and modify for your own use.

Three examples of simple matrices are provided below. The first example is for an essay worth 25% in an education unit (provided with permission). Other criteria could also be included depending on which learning outcomes an essay is assessing. Criteria for evidence of proof reading, correct format for in-text references and for the final list of references could also be included. The second example is for an assessment of the knowledge attribute in the health field developed by J. Orrell, Flinders University. The third example is excellent giving a comprehensive breakdown of both dimensions of a task and quality levels for the task, and also assigns a mark to each learning outcome.

Example 1 from the field of education

Criterion	Fail	Pass	Credit	Distinction	High distinction
Knowledge of subject content, specifically measurement and space and geometry. Element 1, Aspect 1. Knowledge of pedagogy. Element 1, Aspect 2. Teachers know their students and how they learn Element 2	Essay does not address the question asked. Response does not demonstrate an understanding of constructivist approaches to teaching mathematics, hence maintaining ownership of mathematical ideas is not evident in the submission.	A focus on one particular aspect of mathematics teaching. Limited supportive evidence and references.	A range of relevant aspects discussed, however, these are not linked adequately to the syllabus strands or developmental models	The essay is structured appropriately and there is a focus on the relationships among the identified elements. These are supported with reference to the syllabus and further readings.	A well structured and highly evidence-based essay. The connections between models, the current syllabus and teaching strategies are clearly articulated.

Example 2 from the field of health

Attribute	Levels of attainment			
	Developing	Functional	Proficient	Advanced
General description of the level of attainment	Not yet to desired standard or unsafe practice. <i>Re-submit or fail grade</i>	Reached basic academic standards and capable of limited safe practice. Work is rule based with limited or no translation and interpretation of concepts, skills and procedures and limited adaptations to meet situational factors unless aided. <i>Pass grade.</i>	Has completely reached the standards expected. Can function independently in novel contexts, adapting concepts, skills and procedures to meet situational factors. Demonstrates an appreciation of own limitations and can set personal goals. <i>Credit grade</i>	Has gone beyond the basic expected standards. Exhibits high level of independence and can use principles to generate new understanding and can provide theoretical, defensible arguments for their own interpretations and adaptations. Can engage in productive critical reflection. <i>Distinction or high distinction.</i>
Knowledge and understanding	Limited understanding of required concepts and knowledge. Inaccurate reproduction of texts and lectures. Cannot discuss concepts in their own words.	Encyclopaedic knowledge and can reproduce accurately required facts and definitions. Has adequate breadth, but limited depth of understanding of basic concepts	Exhibits breadth and depth of understanding of concepts. Can use terminology accurately in new contexts and has transformed ideas so they can express them in their own words. Demonstrates an appreciation of the limits of their own understanding.	Exhibits accurate and elaborated breadth and depth of understandings of concepts. Knows how particular facts came to be. Demonstrates an appreciation of the limitations and temporary nature of conceptual knowledge in the discipline. Can generate and justify principles, protocols and hypotheses.

Example 3: Marking Criteria for a Group Report and Presentation

Rubric criteria by Jamie Mackee, School of Architecture and Built Environment, University of Newcastle

Learning outcomes	Mark	Fail	Pass	Credit	Distinction	High distinction
1. Description and analysis of professional role and responsibility (Mark for individual work) 35 marks		<ul style="list-style-type: none"> • All major aspects missing • Lack of understanding of role and responsibility of chosen professional. • No or almost no evidence of understanding of the context of the professional's role within the problem. • No or almost no understanding of the relationship with other professionals. 	<ul style="list-style-type: none"> • All major aspects missing • Lack of understanding of role and responsibility of chosen professional. • No or almost no evidence of understanding of the context of the professional's role within the problem. • No or almost no understanding of the relationship with other professionals. 	<ul style="list-style-type: none"> • Some major aspects missing • Understanding of role and responsibility of chosen professional. • some evidence of understanding of the professional's role within the context of the problem. • Understanding of the relationship with other professionals. 	<ul style="list-style-type: none"> • Most major aspects present • Good understanding of role and responsibility of chosen professional. • evidence of understanding of the professional's role within the context of the problem. • Very good understanding of the relationship with other professionals. 	<ul style="list-style-type: none"> • All major aspects present • Excellent understanding of role and responsibility of chosen professional • Evidence of clear understanding of the professional's role its background and responsibility within the context of the problem. • Excellent understanding of the relationship with other professionals.
2. Application of solution/s to the problem/s 15 marks		<ul style="list-style-type: none"> • Confused approach to the problem set • No evidence of understanding of the problem • No formulation of a solution. 	<ul style="list-style-type: none"> • Confused approach to the problem set • No evidence of understanding of the problem • No formulation of a solution. 	<ul style="list-style-type: none"> • Systematic approach to the problem set • Recognition and understanding of the problem • Some consideration of alternative solutions • Development and formulation of a workable solution • Some evidence of contextual understanding 	<ul style="list-style-type: none"> • Independent and systematic approach to the problem; • Recognition and understanding of the problem • Consideration of alternative solutions • Proposal for a workable solution. 	<ul style="list-style-type: none"> • There has been an independent and systematic approach to the problem • Recognition and clear understanding of the issues • Consideration of the alternative solutions and development and formulation of a workable solution

<p>3. Ability to work-in and manage groups to achieve a positive outcome. 10 marks</p>		<ul style="list-style-type: none"> • No comments on group experiences, with no indication of how the group worked or their contribution. 	<ul style="list-style-type: none"> • No comments on group experiences, with no indication of how the group worked or their contribution. 	<ul style="list-style-type: none"> • There is an adequate structured discussion of how the group worked and the individual contribution has been described. • There is some evidence of how the positive outcomes have been achieved. 	<ul style="list-style-type: none"> • There is a clear and well structured discussion of how the group worked and the individual contribution is accurate, reasonable and believable. • It is clear the positive outcomes that have been achieved. 	<ul style="list-style-type: none"> • There is a very clear and excellently structured discussion of the how the group worked and the individual contribution is accurate, reasonable and believable • It is very clear that very positive outcomes have been achieved.
<p>4. Understanding of concepts covered in the lectures, tutorials and set readings. 10 marks</p>		<ul style="list-style-type: none"> • Concepts covered in the lectures, tutorials and set readings not discussed, or mentioned briefly • Little evidence of understanding. 	<ul style="list-style-type: none"> • Concepts covered in the lectures, tutorials and set readings not discussed, or mentioned briefly • Little evidence of understanding. 	<ul style="list-style-type: none"> • Effective reflection on the concepts covered in the lectures, tutorials and set readings. 	<ul style="list-style-type: none"> • Very good discussion of the concepts covered in the lectures, tutorials and set readings. 	<ul style="list-style-type: none"> • Detailed, critical comment on the concepts covered in the lectures, tutorials and set readings.
<p>5. Analysis/reflection 10 marks</p>		<ul style="list-style-type: none"> • No conclusion • Missing important information • Little effort or reflection shown 	<ul style="list-style-type: none"> • No conclusion • Missing important information • Little effort or reflection shown 	<ul style="list-style-type: none"> • Appropriate conclusion • Minor information missing 	<ul style="list-style-type: none"> • Good conclusion • All important information provided 	<ul style="list-style-type: none"> • Excellent conclusion • All important conclusions made • High level, original thought demonstrated
<p>6. Writing structure and style 5 marks</p>		<ul style="list-style-type: none"> • Inappropriate vocabulary and/or grammar • >7 grammatical and/or spelling errors 	<ul style="list-style-type: none"> • Inappropriate vocabulary and/or grammar • >7 grammatical and/or spelling errors 	<ul style="list-style-type: none"> • Minor use of inappropriate vocabulary and grammatical structures • 1-2 grammatical and/or spelling errors 	<ul style="list-style-type: none"> • Appropriate vocabulary and grammatical structures used • No grammatical and/or spelling errors 	<ul style="list-style-type: none"> • Mature writing style using appropriate vocabulary and grammatical structures • No grammatical and/or spelling errors
<p>7. Presentation and Referencing 15 marks</p>		<ul style="list-style-type: none"> • Unsatisfactory level of presentation quality. • None or almost no photos, diagrams etc. 	<ul style="list-style-type: none"> • Unsatisfactory level of presentation quality. • None or almost no photos, diagrams etc. 	<ul style="list-style-type: none"> • Presentation quality to a competent level. • Reasonable level of graphic use, some photos, 	<ul style="list-style-type: none"> • Very effective presentation quality. • Good use of graphics. • Good level of 	<ul style="list-style-type: none"> • Excellent use of graphics (photos, diagrams, tools etc.) • Superior

		<ul style="list-style-type: none"> • Incompetent level of understanding of relevant software. • No evidence of any significant idea for presentation. • Incorrect citing • No and/or very poor reference list 	<ul style="list-style-type: none"> • Incompetent level of understanding of relevant software. • No evidence of any significant idea for presentation. • Incorrect citing • No and/or very poor reference list 	diagrams, drawings etc. <ul style="list-style-type: none"> • Reasonable evidence of an idea for presentation. • Reasonable understanding of the relevant software. • Appropriate citing and reference list 	understanding of the relevant software. <ul style="list-style-type: none"> • Good citing and reference list • Variety of sources 	understanding of the relevant software. <ul style="list-style-type: none"> • Extremely creative presentation ideas well resolved and implemented. • Excellent citing and reference list • Wide variety of quality sources
Total						
0%: <=299	F	Assessor's comments				
50%: 300 - 389	P					
65%: 390 - 449	C					
75%: 450 – 509	D					
85%: 510 - 600	HD					

<http://www.newcastle.edu.au/service/teaching-learning/projects/rubrictemplates/>

Additional resources for alignment and marking criteria can be found in the [Graduate Attributes Resource Guide](#).

- **Alignment in all aspects:** Geoff Hinch pp. 53-57 (gives a good example showing learning outcomes, a list of assessment tasks and a sample of criteria. It also shows how communication skills are developed across a degree.)
- **Alignment in all aspects:** Isabel Tasker pp.107-108, & 111 includes learning outcomes, assessment tasks and a self-reflection exercise. Marking criteria are used for both learning and assessment.
- **Marking criteria:** Jim Scott pp. 75-79 provides a very comprehensive set of criteria in prose form.

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