

UNSW Learning Outcomes Guide

Introduction

This document comprises three parts: this first provides a rationale for, and definitions of learning outcomes at UNSW for programs, streams and courses. The second part gives advice about writing learning outcomes. The third and final part shares examples. Staff can refer to these when they construct Program Learning Outcomes (PLOs), Stream Learning Outcomes (SLOs) and Course Learning Outcomes (CLOs).

Rationale

1. The *UNSW 2025 Strategy* states *attainment* as one of the key principles underpinning the *UNSW Scientia Educational Experience*. Attainment is best identified within an outcomes-based curriculum that is premised on demonstrable learning outcomes which can be systematically assessed. This curriculum approach aligns with UNSW's *Learning and Teaching Strategy 2014-2018*, the Australian Higher Education Standards Framework, and, the Australian Qualification Framework, each of which require programs of study to have clearly specified learning outcomes. These must be 'consistent with the level and field of education of the qualification awarded, and informed by national and international comparators' (HESF, 2015).
2. A key driver for the *UNSW Learning and Teaching Strategy 2014-2018* is the University's strategic intention to ensure clear alignment of teaching, learning and assessment activities with learning outcomes and graduate capabilities at program and course levels. This is consistent with the sector-wide move to outcomes-based approaches to student learning and curriculum delivery, sometimes known as *constructive alignment*.
3. An outcomes-based approach transfers the focus from what teachers provide, to what students achieve, and how they are expected to demonstrate that achievement (Tam, 2014). This outcomes-based approach has underpinned various curriculum reform initiatives across UNSW over recent years, such as curriculum mapping, embedding graduate capabilities, standards-based assessment activities and the *UNSW Integrated Curriculum Framework* (2015).
4. The outcomes-based approach is already used in most programs and courses across UNSW but will now be systematically embedded in learning and teaching policies, guidelines and procedures. The *UNSW Integrated Curriculum Framework* identifies core curriculum components and interrelationships between these components. It guides the alignment of teaching, learning and assessment activities with learning outcomes and graduate capabilities at program, stream, and course levels.

UNSW Integrated Curriculum Framework

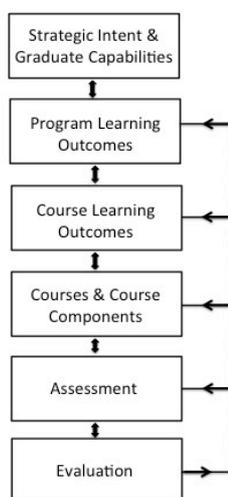


Figure 1. UNSW Integrated Curriculum Framework

5. The Integrated Curriculum Framework (Figure 1) highlights the importance of standardized connections between key curriculum components and how these connections assist the development of effective programs, streams and courses which can be quality assured. These points are fundamental:
- In developing the curriculum, a common starting point is to identify an overall rationale and aims for the degree, followed by writing Program Learning Outcomes (PLOs), and sometimes, Stream Learning Outcomes (SLOs). From each of these, specific Course Learning Outcomes (CLOs) are developed.
 - PLOs, SLOs and CLOs are examined to determine how they align with, and incorporate, the university's strategic intent and desired graduate capabilities.
 - PLOs prescribe knowledge, skills, and their application to a program within which streams, or variations of learning emphases may occur.
 - PLOs and SLOs incorporate graduate capabilities which identify the university's expectations that all UNSW students should achieve a set of generic abilities and skills upon graduation. Graduate Capabilities are associated with the totality of student learning experiences during their study at UNSW.
 - Once these are defined, Course Learning Outcomes (CLOs) are developed with each CLO articulating clear links to one or more PLO or SLO.
 - Course components and assessments are then developed, again articulating clear links between components and their alignment to CLOs.
 - Once courses have been taught and students assessed, an evaluation process can be undertaken that provides data on the extent to which students have achieved PLOs, SLOs and CLOs nested within these.
 - Evaluation data are then used to gauge the effectiveness of courses and the program. Students provide evidence of achievements and their graduate capabilities.

Program Learning Outcomes, Stream Learning Outcomes and Course Learning Outcomes

1. Definitions:

- 1.1. *Program Learning Outcomes* (PLO) are focused statements of what students are expected to evidence or demonstrate upon completion of a program of study. PLOs specify what graduates are expected to know and be able to do as a consequence of their learning and to what standard. Expressing curriculum through learning outcomes positions students in an active role. They are expected to construct their own understandings of knowledge, and develop applicable skills.
- 1.2. *Stream Learning Outcomes* (SLO) are specialisations within a program. At UNSW, Stream is the umbrella term for majors, minors and postgraduate program specialisations and SLOs are learning outcomes specific to such specialisations.
- 1.3. *Course Learning Outcomes* (CLO) are *learner-focused* statements of what students are expected to evidence or demonstrate upon completion of a course. They specify what students are expected to know and do as a result of learning in the course.
- 1.4. *Course aims* are *teacher-focused* statements which describe the lecturer's intended goals for the course.

2. Scope:

- 2.1. PLOs and SLOs prescribe the knowledge, skills and their application that students are expected to demonstrate upon completing a program of study.
- 2.2. PLOs and SLOs are specific to a student's area of study and are aligned with any relevant professional accreditation requirements. They can encompass learning that occurs in 'streams' and may include discipline-specific and generic domains. They can typically be expressed in terms of these domains:
 - Knowledge – what a graduate knows and understands. Knowledge can be described in terms of depth, breadth, kinds of knowledge and complexity.

- Skills – what a graduate can do. Skills *can* include:
 - *cognitive* and *creative* skills involving the use of intuitive, logical and critical thinking;
 - *technical skills* involving the use of methods, materials, tools and instruments;
 - *communication* skills involving oral, literacy, written and numeracy skills;
 - *interpersonal* skills and *generic* skills.
- Application – this refers to knowledge and skills, and the context within which a graduate applies their knowledge and skills (AQF, 2013). Advanced cognitive skills such as evaluation and creation are forms of application.

Writing Learning Outcomes

Plan down from where you want to end up!

What are course aims and learning outcomes?

Learning outcomes are concerned with learner achievements rather than teacher intentions which are typically expressed as course aims. More precisely, aims are concerned with teaching and the teacher's intentions whilst learning outcomes are concerned with student learning. At UNSW, Program Learning Outcomes (PLOs), Stream Learning Outcomes (SLOs) and Course Learning Outcomes (CLOs) are statements which specify what a learner will know or be able to do as a result of a learning activity. A learning outcome is a clear and specific statement of what students are expected to demonstrate and to what standard.

Why do I need learning outcomes?

Learning outcomes are the essential building blocks for the curriculum. At UNSW, *The Integrated Curriculum Framework (2015)* highlights the importance of alignment between key curriculum components. Once you know what you want your students to learn (the learning outcomes), then you can work out methods and activities which will enable them to attain those learning outcomes (i.e. your learning and teaching activities). You can also determine how you can validly and reliably establish the extent or standard to which students have achieved these learning outcomes (i.e. your assessment tasks).

For students, learning outcomes are a point of reference about what they are expected to learn in their program/stream/course of study. This can be helpful to them in anchoring or guiding their study and helping to prepare for assessment. Learning outcomes thus:

- Explain what students are expected to learn during their study.
- Help in determining the teaching and learning activities and methods.
- Assist in designing appropriate assessment tasks.
- Guide students in their study.

Clearly stated learning outcomes enable students to show what they are capable of doing.

How many learning outcomes should I include?

There is no absolutely correct way of writing learning outcomes...

There are no hard and fast rules, but bear in mind that each learning outcome you include has to be achieved and assessed in your program/stream/course. As a general guide, between four and six learning outcomes is about right.

The creation of learning outcomes is not a precise science and they require considerable thought to write. It is easy to get learning outcomes wrong by making them too specific and creating a learning straitjacket. We can also make them too generic, which renders them meaningless.

Learning outcomes at program or stream level are typically further divided into different categories of outcomes. The most common sub-divisions are between:

- subject specific outcomes which relate to the subject discipline and the knowledge and/or skills particular to it, and;
- generic outcomes (sometimes called key transferable skills) which relate to any and all disciplines, e.g. written, oral, problem-solving, information literacy, and team working skills, etc.

The identification of generic skills is seen as important in enhancing the employability of graduates whatever their discipline.

How do you construct learning outcomes?

1. Learning outcome statements commonly begin with 'On completion of the [...program/stream/course...], the successful student will be able to [nominate the adopted learning outcomes...]
2. Such statements are typically characterised by the use of active verbs. Six categories of learning were identified by Bloom (1956) and updated by Anderson and Krathwohl et al (2001) as:
 - knowledge, (*duplicate, state, relate...*)
 - comprehension, (*classify, describe, recognise, review...*)
 - application, (*apply, demonstrate, solve...*)
 - analysis, (*calculate, analyse, appraise, criticise...*)
 - synthesis, (*assemble, construct, plan, formulate...*)
 - evaluation, (*appraise, argue, predict evaluate...*).

Some examples of learning outcomes (based on Bloom's, 1956, taxonomy, and Anderson and Krathwohl et al, 2001) are shown in the next section.

Table 1. A matrix of action verbs for generating learning outcomes

	Remember	Understand	Apply	Analyse	Evaluate	Create
Factual	List relevant knowledge	Summarise features	Respond to frequently asked question	Break components into constituent parts	Make judgments on criteria or standards	Combine elements to form a coherent whole
Conceptual	Recognise symptoms or characteristics	Classify items by category	Provide advice to novices	Determine how parts relate to one another	Determine relevance of results	Reorganize concepts into a new structure
Procedural	Recall how to perform a procedure	Explain instructions	Carry out a procedure in a given context	Analyse compliance or suitability	Judge efficacy of procedures	Design a project
Meta-cognitive	Identify strategies for remembering	Predict one's response	Use techniques to match own strengths	Deconstruct own performance	Critique own performance or progress	Create a learning portfolio

Steps for constructing learning outcomes

1. **Start** by thinking about what students will be expected to demonstrate upon completion of the program/stream/course. Think about the outcomes for these in the context of the whole program.

Tip: Discuss your learning outcomes with colleagues. This will help to ensure their viability and affirm that there is progression and coherence between courses in a stream or program.
2. **Think** about how to finish the sentence: 'At the end of this program/stream/course, students will be able to....'
3. **Choose an action verb.** The verb indicates to the student what it is they are expected to be able to do.
 - An action verb is something your students can actually do like: 'identify', 'describe' or 'differentiate'.
 - More passive verbs such as 'know', 'understand', 'have an awareness of', 'be familiar with', or terms like 'competency in', may be useful in thinking about the overall aims of the program, stream or course, but learning outcomes need action verbs, which describe how students will demonstrate their learning.
 - For instance, the overall program or stream aim might be for students to be able to understand conversational Chinese, but a course learning outcome within that program or stream might be for students to be able to translate a conversation about everyday things from Chinese into English.

4. **Relate** the action verb to the content and skills a student will evidence in your program/stream/course. The resulting learning outcome will then help in determining learning and teaching activities for the program/stream/course. It is clear, therefore, that learning and teaching activities need to be designed to ensure students have opportunities to achieve stated outcomes.
5. **Ask:** *'How will I know that students have achieved the desired PLOs, SLOs and CLOs? How will I be able to determine the extent or standard of their achievement?'* It is difficult to assess 'understanding' and 'appreciation'. This is why you need an action verb.

Choosing an appropriate action verb also helps to set a standard so you can assess achievement and differentiate between any performance that constitutes a Fail, Pass, Credit, Distinction or High Distinction.

Learning Outcomes Examples

Program Learning Outcomes (PLOs)

As a practical guide when reviewing the curriculum, consider *grouping* or *clustering* detailed PLOs under the major categories, such as knowledge, application of knowledge and skills. A broader PLO that encapsulates clustered learning outcomes can then be constructed to replace multiple PLOs. These examples illustrate PLO construction across categories and two separate disciplines:

Knowledge

Science¹

- Students will be able to explain the fundamental facts, concepts, principles, theories, classification systems and terminology used in the main branches of science.

Criminology and Law

- Students will be able to appraise the complex ways in which the institutions, policies and practices relevant to crime and justice interact.

Skills

Science

- Students will be able to prepare, process, interpret and present data using appropriate qualitative and quantitative techniques.

Criminology and Law

- Students will be able to identify and ask questions appropriately to explore relevant issues or problems within criminology and law.

Application of knowledge and skills

Science

- Students will be able to obtain, record, collate and analyse data derived from practical investigations, and interpret and report their significance in the light of underlying theory, practical issues and relevant information from other sources.

Criminology and Law

- Students will be able to construct and present sophisticated arguments using appropriate concepts, models, theories, legal authority and evidence.

For programs that have several specialisation streams PLOs may well be quite generic, while the stream learning outcomes can bring in the disciplinary focus to contextualise learning outcomes.

Poor / Better / Best

An example² below demonstrates how to improve a PLO statement:

Poor: *Students will understand different theories relevant to criminology and law.*

This is poor because it does not specify to what extent students should understand these theories. Should students be able to recognise the theories, recite central ideas or criticise the assumptions?

Better: *Students will demonstrate critical understanding of different theoretical positions or arguments relevant to criminology and law using both primary and secondary sources.*

¹ Adapted from The Open University BSc (Honours) Natural Sciences and BA (Honours) Criminology and Law.

² Adapted from How to Write Program Objectives and Outcomes
<http://www.assessment.uconn.edu/docs/HowToWriteObjectivesOutcomes.pdf>.

This is better because it signals that students should draw from primary and secondary sources to develop their understanding of theoretical positions, and that a level of criticality is expected. The extent to which they should understand this is still unclear.

Best: *Students will be able to synthesise, compare and evaluate different theoretical positions or arguments relevant to criminology and law using both primary and secondary sources.*

This is the clearest and most specific statement of the three examples. It clarifies how students are expected to demonstrate that they 'understand'. It explains a specific target students are expected to evidence. It also provides academics with a reasonable guide for appraising student performance.

Course Learning Outcomes (CLOs)

Medical Sciences

Course Aim¹

The aim of this course is to provide students with an understanding of the structural organization of the human body at a gross (macroscopic) and histological (microscopic) level.

Learning Outcomes

At the end of this course students will be able to:

- identify anatomical features of musculoskeletal, respiratory, cardiovascular, nervous, digestive, reproductive and sensory systems on dissected human specimens, bones and models;
- explain functional and applied aspects of the body system applying these anatomical features
- identify cells and tissues, viewed by virtual microscopy images of real tissue with consideration of their functions.

Arts and Media

Course Aims²

The aim of the course is to provide a deeper understanding of the relationships between the media, society and politics and to establish a grounding in Media Studies. The course will hone the theoretical, conceptual, and analytical skills required for a sophisticated and independent analysis of media power and policy.

Learning Outcomes

At the end of this course students will be able to:

- analyse media power/policy in relation to the complex social and political dynamics of the contemporary mediascape;
- conduct scholarly enquiry of media power and policy;
- deploy media and information technology in the service of independent and collaborative research demonstrating a high level of media and information literacy.

¹ Adapted from 2511 Fundamentals of Anatomy, UNSW
<https://medicalsciences.med.unsw.edu.au/sites/default/files/soms/page/Undergrad/2015-ANAT2511-course-outline.pdf>

² Adapted from ARTS1091, Media, Society, Politics, UNSW
https://sam.arts.unsw.edu.au/media/SAMFile/ARTS1091_Course_Outline_20131.pdf

Poor / Better / Best

An example below demonstrates how to improve a CLO statement:

Poor: *Students should know the historically important systems of psychology.*

This is poor because it says neither what systems nor what information about each system students should know. Are they supposed to know everything about them or just names? Should students be able recognize the names, recite the central ideas, or criticize the assumptions?

Better: *Students should know the psychoanalytic, Gestalt, behaviorist, humanistic, and cognitive approaches to psychology.*

This is better because it says what theories students should “know”, but it still does not detail exactly what they should “know” about each theory, or how deeply they should understand whatever it is they should understand.

Best: *Students should be able to recognize and articulate the foundational assumptions, central ideas, and dominant criticisms of the psychoanalytic, Gestalt, behaviorist, humanistic, and cognitive approaches to psychology.*

This is the clearest and most specific statement of the three examples. It clarifies how one is to demonstrate that he/she “knows”. It provides even beginning students an understandable and very specific target to aim for. It provides faculty with a reasonable standard against which they can compare actual student performance.

Source: <http://www.assessment.uconn.edu/docs/HowToWriteObjectivesOutcomes.pdf>

References

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