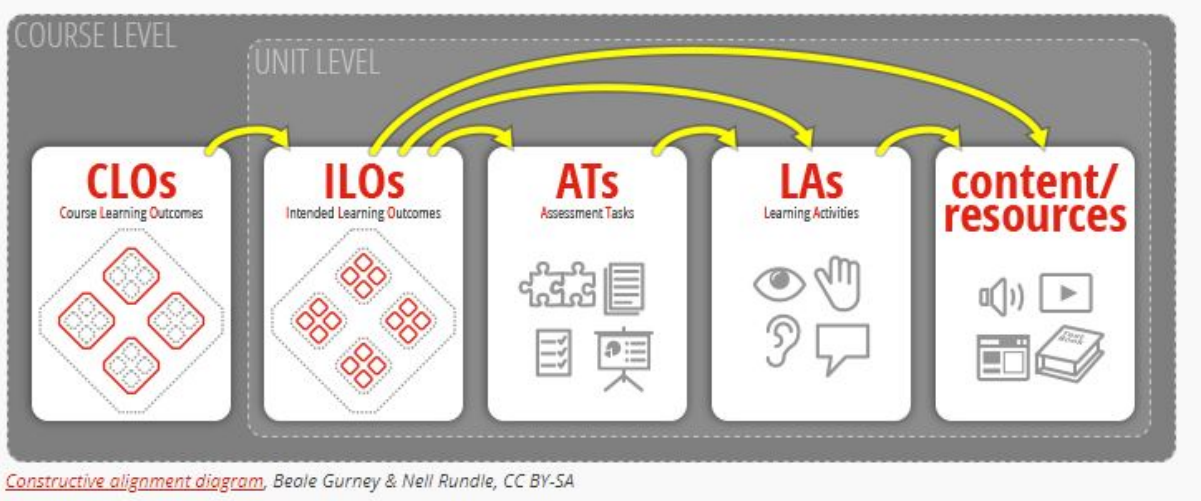
Writing Effective Course Aims, Course Learning Outcomes, Unit Aims and Unit Learning Outcomes

What is Constructive Alignment?

- Constructive Alignment is a teaching principle that combines *constructivism*, the idea that learners construct or create meaning out of learning activities and what they learn, and *alignment*, a curriculum design concept that emphasizes the importance of defining and achieving intended learning outcomes.

Sourced from: https://flexforward.pressbooks.com/chapter/constructive-alignment/#:~:text=Constructive%20Alignment%20supports%20positive%20academic,Explicit%20(obvious%2C%20visible).

How does it all fit together?



Constructive alignment diagram, Beale Gurney & Nell Rundle, CC BY-SA

Sourced from: https://www.teaching-learning.utas.edu.au/unit-design/constructive-alignment

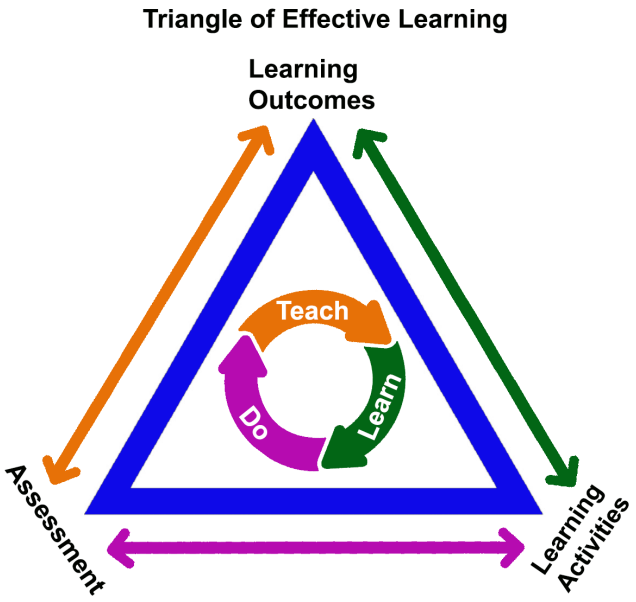
Constructive Alignment

As developed and defined by John Biggs (2014), Constructive Alignment involves:

- Thoughtfully determining intentions for what students should learn and how they will demonstrate their achievement of these intended learning outcomes, and clearly communicating these to students;
- Designing teaching and learning activities so that students are optimally engaged in achieving these learning outcomes; and
- Creating assessments that will allow students to demonstrate their attainment of the learning outcomes and allow instructors to discern how well these outcomes have been achieved.

https://www.johnbiggs.com.au/academic/constructive-alignment/

Constructive Alignment in Content Delivery



Learning Outcomes are then aligned to CLOs and this can be an iterative process as the alignment takes place

How is the CAM being used?

- Some universities are using Constructive Alignment as a quality assurance tool
- If we focus only on this aspect we can lose sight of how Constructive Alignment is used to improve the student experience
- Yes, it is a tool used in higher education to help meet TEQSA and AQF requirements as TEQSA uses CA in their design
- But in its true form, it is used to create a well-designed pathway where students can easily see the connections between the ULO, Activities, Content and Assessments.

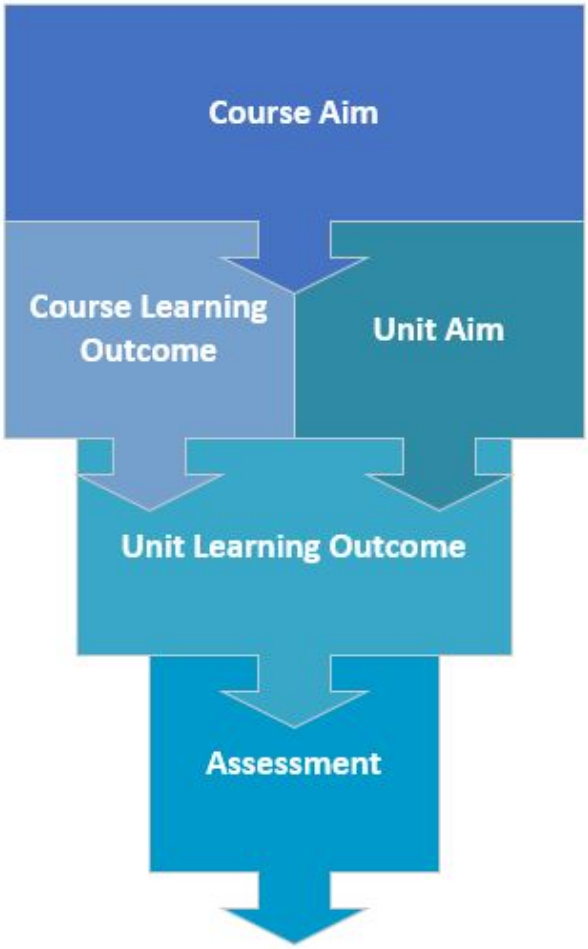
Benchmarking

Why is this important?

As a point of reference benchmarking gives you insight into what your competitors are offering and how they have designed their courses. It helps to provide a baseline for what you may want to develop. This Benchmarking gives you a big picture of what's out there, and you can also determine if there are already some specific standouts or points of difference around your course that may be appealing to prospective students, such as cultural safety and/or awareness; ethics and professionalism; teamwork/ independence and communication skills; application of discipline knowledge; lifelong learning and reflective practice; critical thinking, problem-solving and research skills; employability skills just to name a few. The process of benchmarking provides a direction of where your course should head, helping to identify what your course is about and this will help you write your Course Aim.

Course Aims

Before you can begin developing Course Learning Outcomes (CLOs), you need to develop the course aim. Here is a diagram that demonstrates how each level is dependent on the previous level. The Course Aim is where it all starts and everything flows from this first idea of what the course is about.



What does a course aims consist of? The aim should provide an overview of the purpose of the course and can have multiple sentences or even dot points. The aim should be what skills and knowledge students will gain when they finish the course and it can also include employment opportunities.

Here are a couple of questions that will help you determine whether your course aim has what it needs to be effective and convey the purpose of your course.

- What is the purpose of the course?
- What is the course trying to achieve?
- What employability skills does this course offer?

Remember, the aim provides an overview of what the course is hoping to achieve, not what students will be able to demonstrate at completion. The course learning outcomes identify **what** students can do by the end of the course, written using action verbs

Here are two examples for the Bachelor of Arts:

Studies in the arts will foster transferable skills that are highly valued across all sectors – skills such as communication, analysis, critical thinking and problem-solving. … Studies in the Arts will provide you with the versatility, cultural awareness, and creative thinking to pave your 21st-century career in creative arts, journalism, marketing, politics, creative writing and more.

Do these Course Aims answer the two questions and possibly include employability skills?

- What is the purpose of the course?
- What is the course trying to achieve?
- What employability skills does this course offer?

Studies in the arts will foster transferable skills that are highly valued across all sectors – skills such as communication, analysis, critical thinking and problem-solving. …Studies in the Arts will provide you with the versatility, cultural awareness, and creative thinking to pave your 21st-century career in creative arts, journalism, marketing, politics, creative writing and more.

This covers the first two questions but does not include employability skills specifically, although the last bit of the green could be employability skills is not specifically noted. Although you do not have

to cover employability skills this is a good practice as it provides good information for prospective students and may help current students create effective CVs.

The next example is a bit better and covers all three areas.

The degree equips students with creative, critical and analytical skills ideal for lifelong learning. The degree offers a wide choice of career options and can provide a solid foundation for further studies…The Bachelor of Arts fosters a global perspective and equips students with core life skills as well as the fundamental generic skills insisted on by employers: critical thinking, research capability, ethical practice, creativity, independence, autonomy, initiative, innovation, effective communication (oral, written and electronic), presentation skills, teamwork and interpersonal skills, management and planning skills, computer literacy, and cultural awareness.

Now that you have your course aim you can start to think about developing your Course Learning Outcomes

Course Learning Outcomes

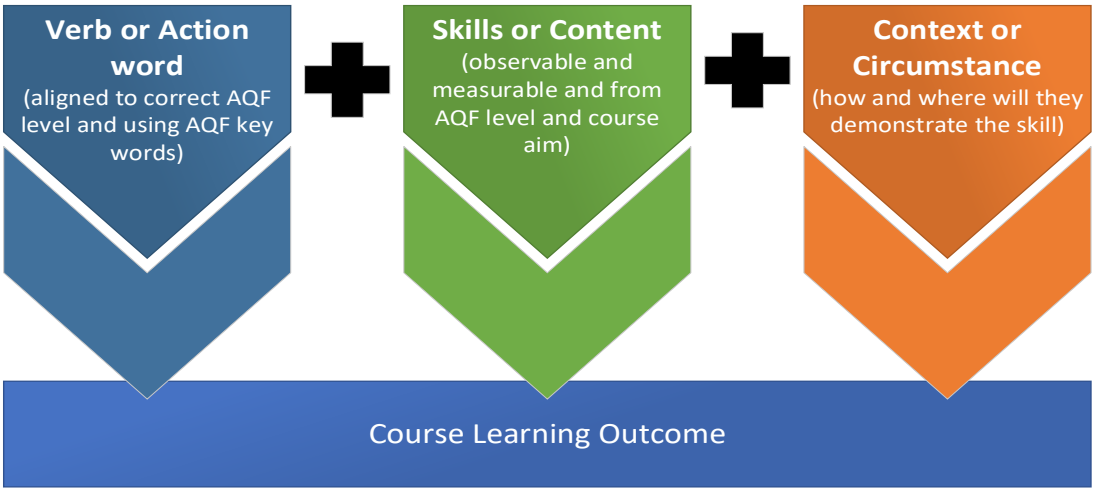
Course Learning Outcomes (CLOs) should support the Aim of the course and be expressed in explicit terms of what students should be able to demonstrate. This is the key difference between the Aim and CLOs.

When developing your CLOs, you need to keep the following in mind from the Curriculum and Design Policy

Design Principle 1: Course Learning Outcomes and Graduate Attributes aligned with the AQF

(11) Accredited courses will specify Course Learning Outcomes that:
- a. encompass the knowledge, skills and application relevant to the course type as specified in the AQF;
- b. address discipline-specific and professional requirements; and
- c. are relevant, desirable, achievable, concise and written in plain English.

Keeping this in mind, what should a good CLO look like? The three parts of the CLOs are as follows:



How do we determine what these three parts are? Let's look at each part individually and see where we gather this information from, and then we will put them all together at the end and look at some example CLOs. The process is iterative and many times you may start with a different part first when writing your CLOs. We will discuss them in the order presented above.

Verb or Action word

The Verb or Action word (we suggest a limit to one or two) come from the AQF language for the level of the course. You are developing CLOs that are the end of course, cognitive abilities, skills and knowledge levels that students will leave the course with. If your CLOs are set at a lower AQF level then the course is designed for, then the ULOs will have difficulty mapping to the appropriate level.

The AQF language for the Verbs and Action words and the skills, knowledge or content. Here is an example of the AQF 7 specifications.

AQF (7) specification for the Bachelor degrees Graduates at this level will have broad and coherent knowledge and skills for professional work and/or further learning					
Knowledge	**Skills:** Graduates at this level will have well-developed cognitive, technical and communication skills to select and apply methods and technologies to:			**Application of Knowledge and Skills:** Graduates at this level will apply knowledge and skills to demonstrate autonomy, well-developed judgement and responsibility	
Graduates at this level will have broad and coherent theoretical and technical knowledge with depth in one or more disciplines or areas of practice.	analyse and evaluate information to complete a range of activities	analyse, generate and transmit solutions to unpredictable and sometimes complex problems	transmit knowledge, skills and ideas to others	in contexts that require self-directed work and learning	within broad parameters to provide specialist advice and functions

We can pick out some common language from the AQF7 such as; in some instances, they are a mix of qualifiers and verbs.

- analyse
- evaluate
- generate
- well-developed,
- apply knowledge,

Skills or Content

Once you have your Verb or Action word(s) based on the AQF level you then need to look at the Skills or Content that needs to be included. This can come from the AQF descriptors, Threshold Learning outcomes, the course aim or accrediting bodies.

Here are a few of the skills and knowledge that students need to develop.

- broad and coherent,
- transmit solutions to sometimes complex problems,
- depth of knowledge

Then you also want to look at the content of knowledge or practical skills that you need to address in the course. This comes directly from the content that is being taught. It might be that they need to 'understand specialised knowledge in IT networking and troubleshooting skills'.

Next, we need to add in the context or circumstance.

Context or Circumstance

You then need to look at the context or circumstance of what you are asking them to demonstrate. How are they going to show you that they have the knowledge or skills that you are trying to evaluate? Again, you need to consider the AQF descriptors, Threshold Learning outcomes, the course aim or accrediting bodies. What settings should they be able to do these skills in? The context of the below CLOs relate to the industry that the skills would be demonstrated within. For instance, with our above example 'understand and apply specialised knowledge in IT networking and troubleshooting skills in a range of industry contexts' – we have added in the context or circumstance now to this CLO.

The below CLO examples are at an AQF level of 6. Do you think they are appropriate for the AQF 6? They are broken up into three parts. How well are they written?

Verb	Skills or Content	Context or Circumstance
Exercise	critical judgement to identify problems and contribute to their solutions	in a range of civil construction engineering and management settings.
Apply	ethical and sustainable values and practices	within a range of civil construction engineering and management contexts.
Communicate	information, concepts and solutions, individually and/or in a team	within a range of civil construction engineering and management contexts.

One thing to notice is that Course Learning Outcomes are going to be broader as they need to cover the full course and not just a single unit. The CLOs needs to capture the full aim of the course within the six to ten Course Learning Outcomes for a typical degree course. Again, this is where benchmarking your CLOs across other universities in the sector will help you determine if your circumstance or context is in line with other universities. Let's look at the above CLO examples and see what can be improved for the first example with respect to an AQF 6 AQF language.

Verb	Skills or Content	Context or Circumstance
Exercise	critical judgement to identify problems and contribute to their solutions	in a range of civil construction engineering and management settings.

The verb here is Exercise, even though it says exercise critical judgment – the critical judgment is part of the skills needed. The skills and content are the critical judgement to identify problems and contribute to their solution. And finally, the context or circumstance is the engineering and management settings, so this is where they will need to use these skills. The only issue is if the language is at the AQF 6 level.

At the AQF 6 level, graduates are expected to have broad theoretical and technical skills in specific areas or broad areas for paraprofessional/highly skilled work. Graduates at this level will have a broad range of cognitive, technical and communication skills to select and apply methods and technologies and will be able to apply knowledge and skills to demonstrate autonomy, judgement and defined responsibility.

The only issue in the CLO is the use of the word 'critical' which is an AQF 7 or higher skill. For AQF 6 the use of 'critical' is more complex than would be required at this level of study and should be removed from the CLO. The new CLO should be 'Exercise judgement to identify problems and contribute to their solutions in a range of civil construction engineering and management settings'.

Have a look at your CLOs at this point and see if your words are on target or if you need to adjust the level of your CLOs. The next section will be about the development of Unit Aims and Unit Learning Outcomes

Unit Aims

Unit aims are similar to Course Aims except you are focusing solely on what the **unit** is about and what you want students to get out of the unit. By focusing on what opportunities, the students have to learn and experience and how that may translate to learnings and activities, you can determine what you are hoping they will gain from these learnings and activities. You should be able to answer these two questions with your unit Aim. Aims are not ULOs so they are not written with a cognitive level, they are a statement of intent on your behalf.

- What essential learnings opportunities do students need to have experience in this unit?
- What essential activities will students need to have experienced in this unit?

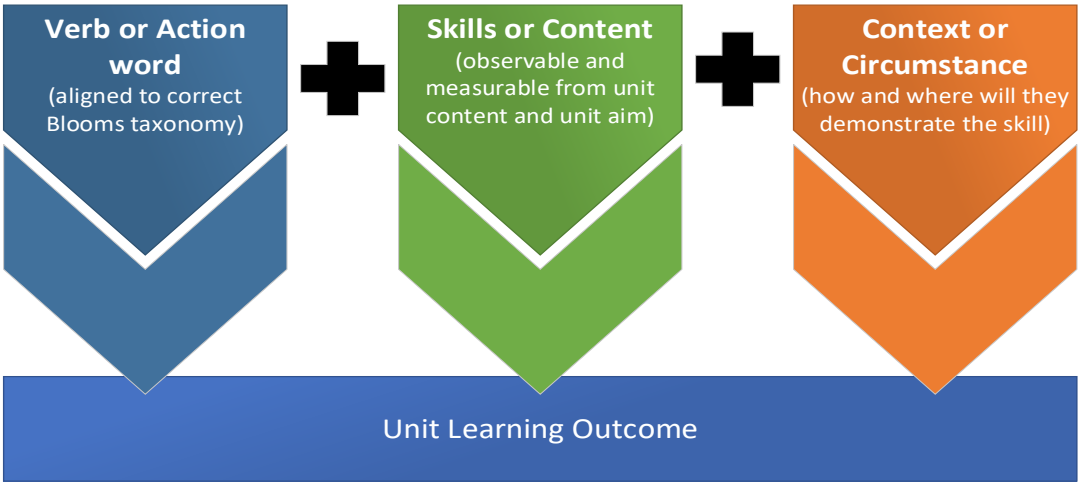
If your Aim can answer these then you have created a good unit aim.

Here is an example of a unit Aim for a Fashion Design Project unit.

This unit will provide an insight into the theories and practices of Fashion Design and provides students with the opportunities to hone their fashion design skills through a variety of industry-relevant activities. Student's will also have the opportunity to collaborate with community members on a Fashion Design project to provide students with the opportunity to build community links in the fashion design industry.

Unit Learning outcomes

Unit learning outcomes will need to be relevant, desirable, achievable, concise and written in plain English. This is covered by the same SCU policy as CLOs. The three parts of a Unit Learning Outcome are below. They are the same three parts as seen in the CLO diagram but where we get the information is not the same. The process is iterative and many times you may start with a different part first when writing your ULOs. We will discuss them in the order presented above.



Verb or Action word

The Verb or Action word (we suggest a limit of one or two) come from Bloom's taxonomy and to some extent the AQF language from the level of the course. Across the Unit, you want to have ULOs that address all of the cognitive ability levels related to knowledge, skills and application of these. So basically, you should not have a large portion of your ULOs as that sit at the understanding and remembering or it makes it difficult to get students to meet the higher AQF levels by the time they complete the course. So, for example, if you use the word demonstrate across all of your ULOs you will have only achieved an "apply" level in Bloom's taxonomy for the course. Choose your words wisely so there is room for cognitive growth as the students move through the units.

But you also do not want to choose too many words that are at different levels or you might not really have met the higher levels. For instance, 'critically apply well-developed communication skills' - means that you have two levels that you need to make sure you cover with your Unit Learning Outcomes (ULOs) across the course. This means that you might 'apply communication skills' but this does not cover the 'critically' aspect of the ULO. If you have multiple levels within your ULOs you will need to make sure that you target the higher levels too.

Using the Blooms Taxonomy, we would focus our ULOs on the level of learning in each unit and make sure that they also cover the Unit Aim. For the level of study, we might break up the cognitive levels as follows from the Bloom's Chart below. In 1000 units we might focus more on factual and conceptual, while in the 2000 level units we could also include procedural and finally, in the 3000 level units, we would aim for metacognitive. This is not to say that you could not have lower or higher skills in any of the units, but you want to have a portion of the ULOs at the correct level so that students are building their skills and knowledge as they move through the course.

Cognitive ability	Level of difficulty	Verb (Action word)
Metacognitive	**Creating**	design, compose, create, plan, combine, formulate, invent, hypothesise, substitute, write, compile, construct, develop, generalise, integrate, modify, organise, prepare, produce, rearrange, rewrite, role-play
	Evaluating	reframe, criticise, evaluate, order, appraise, judge, support, complete, decide, discriminate, recommend, summarise, assess, choose, combine, defend, estimate, find errors, grade, measure, predict, rank
Procedural	**Analysing**	analyse, compare, classify, contrast, distinguish, infer, separate, explain, select, categorise, connect, differentiate, discriminate, divide, order, point out, prioritise, subdivide, survey, advertise, appraise, break down, dissect

Conceptual	**Applying**	solve, apply, illustrate, modify, use, calculate, change, choose, demonstrate, discover, experiment, relate, show, sketch, complete, construct, dramatize, interpret, manipulate, paint, prepare, produce, act, practice, predict, record, report, schedule, solve, stimulate, teach, transfer, use, write
Factual	**Understanding**	ask, cite, explain, describe, interpret, paraphrase, summarise, classify, compare, differentiate, discuss, distinguish, extend, predict, associate, contrast, covert, demonstrate, estimate, express, identify, indicate, infer, relate, generalise, translate
	Remembering	define, identify, describe, label, list, name, state, match, recognise, select, examine, locate. memorise, quote, recall, reproduce, tabulate, tell, copy, discover, duplicate, enumerate, rewrite, recite

Modified from https://www.utica.edu/academic/Assessment/new/Blooms%20Taxonomy%20-%20Best.pdf

Words to Avoid when Creating ULOs

There are also some words that we should not be using for ULOs as they are not measurable or at least not easily measurable. Here is a list of these words and the word forms that should not be included in ULOs

Watch Out for Verbs that are not Measurable

In order for an objective to give maximum structure to instruction, it should be free of vague or ambiguous words or phrases. The following lists notoriously ambiguous words or phrases which should be avoided so that the intended outcome is concise and explicit.

WORDS TO AVOID	PHRASES TO AVOID
• *Believe* • *Hear* • *Realize* • *Capacity* • *Intelligence* • *Recognize* • *Comprehend* • *Know* • *See* • *Conceptualize* • *Listen* • *Self-Actualize* • *Memorize* • *Think* • *Experience* • *Perceive* • *Understand* • *Feel*	**Evidence a (n): To Become: To Reduce:** • *Appreciation for* • *Acquainted with* • *Adjusted to* • *Awareness of* • *Capable of* • *Comprehension of .* • *Cognizant of* • *Enjoyment of* • *Conscious of* • *Familiar with* • *Interest in* • *Interested in .* • *Knowledge of* • *Knowledgeable about .* • *Understanding of*

Source: https://www.utica.edu/academic/Assessment/new/Blooms%20Taxonomy%20-%20Best.pdf

Here are three examples of ULOs at an AQF 6 in 1000 level units. How well are they written?

Verb	Skills	Context
Apply	a basic understanding of load actions and forces	acting on bodies in equilibrium
Collect and analyse	safety data to implement improvements	in WHS
Perform	basic calculations	related to analysis of road traffic

As you can see, these are much more specific compared to the CLOs and they should relate to what you want students to learn in the unit, what skills they will be able to show and how you will assess them.

Let's look at the above ULO examples and see what can be improved for the first example with respect to an AQF 6 AQF language.

Verb	Skills	Context
Apply	a basic understanding of load actions and forces	acting on bodies in equilibrium

Referring back to the earlier AQF 6 information, we see that graduates are expected to have broad theoretical and technical skills in specific areas or broad areas for paraprofessional/highly skilled work. Graduates at this level will have a broad range of cognitive, technical and communication skills to select and apply methods and technologies and will be able to apply knowledge and skills to demonstrate autonomy, judgement and defined responsibility. So, the question at hand is a basic understanding within this AQF 6 level? To determine this, I would look at the AQF 5 summary statement and compare it to the AQF 6 summary statement to determine what is required here.

AQF 5 expects specialised technical and theoretical knowledge to solve sometimes complex problems that may be subject to change but have set parameters. Where AQF 6 expects broad technical and theoretical knowledge to interpret and transmit solutions to unpredictable and sometimes complex problems in contexts that are subject to change within broad parameters to provide specialist advice and functions (AQF, 2013).

In this instance, I would say that students need more than a basic understanding of load actions and forces. I would change the word basic to sound. The new ULO would be 'Apply a sound understanding of load actions and forces acting on bodies in equilibrium'. It is also recognised that you would have multiple level 1000 units so you would have a varying degree of skills and knowledge across several units that would cover the same CLO so that by the end of the course student have attained all of the CLOS.

Now have a look at your ULOs and does the language fit the level of study and does it align with what you want to assess.

Document Resources List

Anderson, L.W. (Ed.), Krathwohl, D.R. (Ed.), Airasian, P.W., Cruikshank, K.A., Mayer, R.E., Pintrich, P.R., Raths, J., & Wittrock, M.C. (2001). A taxonomy for learning, teaching, and assessing: A revision of Bloom's Taxonomy of Educational Objectives (Complete edition). New York: Longman.

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Additional Readings on Constructive Alignment

1. https://www.herdsa.org.au/herdsa-review-higher-education-vol-1/5-22
2. https://onderwijstips.ugent.be/en/tips/opleidingsonderdeel-samenstellen/
3. https://www.tandfonline.com/doi/full/10.1080/21568235.2020.1816197
4. *https://www.teaching-learning.utas.edu.au/unit-design/constructive-alignment*
5. *https://flexforward.pressbooks.com/chapter/constructive-alignment/#:~:text=Constructive%20Alignment%20supports%20positive%20academic,Explicit%20(obvious%2C%20visible)*
6. *https://www.johnbiggs.com.au/academic/constructive-alignment/*