## Contents of Repository

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## What is competence-based education?

Competence-based education (CBE) is about what students can do (as opposed to what they know). This shift away from a knowledge-focused curriculum is aligned with contemporary movements within the Higher Education sector such as Graduate Attributes frameworks, Education 4.0, and the 4th Industrial Revolution.

The competence-based approach requires the development of Programme Competencies to replace module and programme level Learning Outcomes. This has three aims:

1) To encourage educators to make curriculum design decisions at a programme-level, and to help students see their degrees as a cohesive whole where they can apply what is learned in one context to the rest of their course.

2) To ensure that degrees have authentic opportunities for students to apply what they have learned and developed during their course. These opportunities should help students see how their degree provides value to their academic, professional, and personal futures, as well as how the discipline contributes to addressing real-world challenges.

3) To endorse a holistic development mindset in students and educators. Helping students recognize the development of transferable skills and graduate attributes, and not just knowledge and understanding of the discipline.

We find that there are many commonalities between the principles of CBE and many of the solutions contemporary challenges facing the Higher Education sector; such as Generative AI, inclusive education, and personalised education.

There is extensive guidance on developing effective programme competencies:

University of Hull Competence framework - <https://libguides.hull.ac.uk/knowledgemanagement/hull#Intro%20GA>.

QAA Competence-based Education Primer - <https://www.membershipresources.qaa.ac.uk/teaching-learning-and-assessment/teaching-and-learning/competence-based-education> [QAA log in required]

## University of Hull Biosciences Competencies Explanation

As part of our curriculum transformation, we needed to develop competencies for four bioscience programmes simultaneously spanning the full range of the subject: Biochemistry, Biology, Zoology, and Marine Biology. Our approach was to really ‘zoom out’ on what we expect a bioscience graduate to be able to. Our final competencies are designed to apply equally to any bioscience programme (and potentially any science programme).

This process resulted in 10 competencies (see separate document) aligned to the QAA Biosciences Subject Benchmark Statement, with each module assuming responsibility for ensuring that students develop each of the competencies within the identity of the subdiscipline. For example, as much as possible every module should have some practical component that allows the development and assessment of PC3 (Practical Skills), but this would be a vastly separate set of skills on an ecology module compared to a cellular biology one. Similarly, different modules might interpret PC7 (Ethics Literacy) differently, a conservation module might focus on decolonization while a biotechnology module might choose to discuss the contribution of genetically modified organisms to achieving the UN SDGs (Sustainable Development Goals). In all instances, students develop and evidence the same fundamental competency, but through the lens of their different disciplines.

### Assessment in CBE

Assessments are designed as an opportunity for students to evidence their competencies. Ideally, assessment is experienced by students in multiple authentic contexts and in such a way that the development of all the competencies assessed is scaffolded into the curriculum. Furthermore, these competencies are incorporated into the marking criteria, such that student final grades reflect their holistic development of all competencies (and not just academic literacies). For example, using peer-review systems (supported by formal meeting minute and communications) to grade PC8 (Collaboration) as part of an assignment and not separate to it. Or including student understanding and application of ethics issues within the assignment context (see example marking criteria provided).

This way the programme is designed to be fully constructively aligned. Students experience a curriculum designed to develop all the Programme Competencies (through direct and indirect instructional design), they opportunities to evidence these competencies throughout their journey (through assessment), and the final grades students receive are based around the full array of competencies (through CBE aligned marking criteria).