Subject Benchmark Statement: Biomedical Science and Biomedical Sciences

The Basics

This document is a summary of the Subject Benchmark Statement for Biomedical Science and/or Biomedical Sciences. It is specifically designed to provide a short and accessible overview of the main statement for students, employers and academics. It is not intended to replace or alter the Subject Benchmark Statement, which should be referred to in the design and approval of courses and when any further detail is required.

Subject Benchmark Statements are an established part of the quality assurance arrangements in UK higher education as non-regulatory, sector-owned reference points, developed and written by academic communities on behalf of their subject. Subject Benchmark Statements describe the nature of study and the benchmark academic standards expected of graduates in specific subject areas, and in respect of particular qualifications. They provide a picture of what graduates in a particular subject might reasonably be expected to know, do and understand at the end of their course or programme.

Subject Benchmark Statements are presented in four sections. The first section outlines the contextual information - providing the operational landscape, and boundaries, of subject discipline. This includes consideration of the ways in which the discipline addresses wider social goals specifically in relation to: equality, diversity and inclusion (EDI); the requirements of disabled students; education for sustainable development (ESD); and, enterprise and entrepreneurship.

Section 2 covers distinctive features of the course, including curriculum design, partnership arrangements, flexibility of delivery, progression and ongoing monitoring processes. The third section explains any features relevant to teaching, learning and assessment activities for the subject. The final section describes the benchmark standards of achievement reached by all graduates with a bachelor's degree with honours in the subject, with some subjects also including achievement at master's level.

Why study a degree in Biomedical Science/Biomedical Sciences?

As a subject discipline, Biomedical Science provides a degree that will include all the key clinical laboratory specialities, thereby enabling graduates to achieve the academic requirements needed to apply for registration with the Health and Care Professions Council (HCPC) as a Biomedical Scientist (protected title). Eligibility for HCPC registration can be achieved by award of an Institute of Biomedical Science (IBMS) accredited honours degree plus a placement/period of training in an IBMS-approved training laboratory where the IBMS Registration Training Portfolio is undertaken and successfully verified (either during the degree or post-graduation).

The wider subject discipline of Biomedical Sciences provides a generally broader content and may encompass a variety of human biology courses. Programmes following this curriculum can be delivered as Biomedical Sciences or with various named awards or specialisms in the degree title, such as molecular biology or cell biology. The potentially broader content of Biomedical Sciences courses may mean the absence of taught material in some or all of the key clinical laboratory specialities results in these courses not meeting the HCPC requirements for registration as a Biomedical Scientist. The Biomedical Sciences 'umbrella' also includes other distinct subject disciplines with more defined career paths including Pharmacology, Nutrition and Human Physiology.

Both Biomedical Science and/or Biomedical Sciences degrees are also considered as an excellent basis for a wide variety of graduate-entry career paths, including:

- life science and pharmaceutical industries
- research laboratories and institutes
- sales and marketing related to healthcare and diagnostic products
- education: school, further and higher education
- food industry and food safety
- forensic laboratories
- clinical trials and regulatory sector.

Only IBMS-accredited Biomedical Science degrees, however, are designed to produce graduates who meet the educational requirements of the HCPC to enter a career in clinical diagnostic pathology working in NHS and private laboratories including Blood Transfusion Services, following completion of the IBMS Registration Training portfolio.

What are the main teaching and learning approaches in Biomedical Science/ Biomedical Sciences?

Teaching and learning strategies are designed to scaffold the acquisition of subject knowledge and skills by moving from study methods that are structured and supported towards more independent and self-directed activities. As the course advances, students become increasingly responsible for their own learning in preparation for the rest of their professional careers. Progression is enabled and reinforced by a diversity of learning and teaching methods that are matched to the expressed learning outcomes. This Subject Benchmark Statement does not aim to be directive about the methods used for a particular course but, rather, provides the basis for reflection in relation to what might be appropriate for a course, and the modules contained within that course. Integrating topics across the programme is essential to ensure effective teaching and integrated learning. Teaching and learning strategies are designed to be enriching, stimulating, challenging, effective and enjoyable.

Synchronous learning activities may include: seminars, tutorials, lectures; laboratory classes; case studies, problem-based learning, simulations and/or team-based learning; workshops - including sessions led by employers/external stakeholders; fieldwork and visits; peer and collaborative learning, including the use of social media; interactive sessions, including debates, quizzes and oral/poster presentations.

Asynchronous learning activities may include: self-directed study; textbooks and digital multimedia; recordings (taught sessions and laboratory demonstrations) and broadcasts; virtual experiments; pre/ post-laboratory and pre/post-sessional exercises; peer and collaborative learning, including the use of discussion fora and quizzes; research projects; reflective practice and portfolio building.

How are students assessed?

The assessment of Biomedical Science/Biomedical Sciences courses includes a mix of methods that are accessible to disabled students and those from varying educational and cultural backgrounds within different learning situations.

Where individual students may be disadvantaged by particular assessment methods, adjustments to those assessments are considered in conjunction with the provider's procedures, while ensuring fairness across the full cohort. The procedures used for assessment cover the subject knowledge (breadth and depth), abilities and skills developed through the degree course, and assessment design is aimed at alignment with teaching and learning approaches and desired learning outcomes.

Assessment strategies are designed to recognise achievement of learning outcomes and competencies, and to discriminate between such achievement at threshold and higher levels. Strategies include a varied range of both formative and summative assessment and may include self and peer-assessment. They provide evidence to employers of graduate attributes. Assessment is progressive in terms of level and content, and leads to effective feedback to enable development of students' knowledge and skills, including transferable skills. In this increasingly digital world, such skills include digital literacy; opportunities are present to exploit this and diversify how students are assessed, ensuring a range of methodologies which allow students from all backgrounds and characteristics to demonstrate their learning and development. Assessments should be authentic, with real-world application to enhance employability skills and professional development; ideally, the assessments should be designed to be inclusive without the need for reasonable adjustments.

Themes for authentic assessment include (but are not limited to):

- practical applications and professional competencies (for example, laboratory, field-based, placement activity)
- collaborative working (for example, peer assessment, team working) integrative assessments (for example, capstone project or dissertation)
- range of style of scientific communication, for a range of audiences (for example, posters, graphical, video, website)
- professional scientific communication (for example, journals, reports)
- professional skills (for example, reflective pieces)

Benchmark Standards

The minimum threshold and excellent standards that a student will have demonstrated when they are awarded an honours degree in Biomedical Science/Biomedical Sciences are outlined on **pages 23-27** of the full Subject Benchmark Statement. The vast majority of students will perform significantly better than the minimum threshold standards. Each higher education provider has its own method of determining what appropriate evidence of this achievement will be and should refer to Annex D: Outcome classification descriptions for FHEQ Level 6 and FQHEIS Level 10 degrees. This Annex sets out common descriptions of the four main degree outcome classifications for bachelor's degrees with honours - 1st, 2.1, 2.2 and 3rd.

The full statement was developed by subject experts drawn from across the sector. Details of the Advisory Group can be found on **page 29** of the full Statement.

Read the full Subject Benchmark Statement

The full Subject Benchmark Statement is available on the QAA website.

Subject Benchmark Statements are published in QAA's capacity as an expert quality body on behalf of the higher education sector.

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