



Programme Specification

Biomedical Science {Foundation} [Frenchay]

Version: 2024-25, v2.0, Validated

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Section 1: Key Programme Details

Part A: Programme Information

Programme title: Biomedical Science {Foundation} [Frenchay]

Highest award: BSc (Hons) Biomedical Science

Interim award: BSc Human Biosciences

Interim award: DipHE Human Biosciences

Interim award: CertHE Human Biosciences

Awarding institution: UWE Bristol

Teaching institutions: UWE Bristol

Study abroad: Yes

Year abroad: No

Sandwich year: Yes

Credit recognition: No

School responsible for the programme: CHSS School of Applied Sciences,
College of Health, Science & Society

Professional, statutory or regulatory bodies:

Institute of Biomedical Science (IBMS)

Modes of delivery: Full-time, Sandwich

Entry requirements: For the current entry requirements see the UWE public website.

For implementation from: 01 September 2024

Programme code: C98P00

Section 2: Programme Overview, Aims and Learning Outcomes

Part A: Programme Overview, Aims and Learning Outcomes

Overview: The BSc (Hons) Biomedical Science (with Foundation Year) programme is a four-year full-time, or five-year sandwich degree, designed to provide a comprehensive foundation in science for students interested in taking a hands-on approach to studying the biology of disease. The programme is within our extensive biomedical science provision with an emphasis on the application of biomedical sciences and provision of a relevant education and practical skills that afford excellent and varied employment opportunities.

Features of the programme:

Educational Aims: The programme combines theoretical and laboratory approaches to understanding the human body and disease, and at more advanced levels is research-informed and aligned to biomedical specialist themes, with the majority of staff research-active as part of the School Centre for Research in Biosciences (CRIB): <http://www1.uwe.ac.uk/h...nces/researchareas.aspx>

The programme aims to provide:

an overall educational experience that covers the broad educational requirements for Institute for Biomedical Science (IBMS) and Health and Care Professions Council (HCPC) accreditation/registration, and benchmark core specialisms. The programme is research-informed at advanced levels and provides knowledge and insight of advanced research and scientific developments associated with the study of health and disease; opportunities for students from a wide range of backgrounds to develop and realise their potential in a supportive and responsive teaching and learning environment; added value for learners in their specialised, subject-specific knowledge and transferable skills; a coherent and flexible programme of study with a variety of attendance modes including a sandwich degree option, with overseas placement options; graduates with an accredited degree route with the possibility of a career as a Biomedical Scientist on following training, after graduation, at an accredited NHS laboratory, completion of a Registration Training Portfolio, and

subsequent registration with the HCPC; a programme responsive to feedback from students, external examiners and other stakeholders as part of quality programme management and enhancement; appropriate facilities and resources to deliver a quality teaching and learning experience.

Programme Learning Outcomes:

On successful completion of this programme graduates will achieve the following learning outcomes.

Programme Learning Outcomes

- PO1. Describe and discuss the key concepts and phenomena relevant to the course confidently, accurately and in detail, using appropriate terminology, and be aware of the full breadth of Biomedical Science, from molecular to cellular, and from health to disease.
- PO2. Apply knowledge and understanding of human biological systems and methodologies to design experiments, and to solve theoretical and practical problems, with awareness of appropriate controls, possible bias, ethics and sustainability.
- PO3. Complete independent open-ended investigative work through a project/research based assignment relevant to the course, including engaging with literature from Biomedical Science to develop insight into the subject.
- PO4. Work collaboratively within a diverse team, contributing positively and flexibly to produce shared outputs in order to recognise the relationships and interfaces between Biomedical Science and other subjects, enabling preparation for efficient interactions in a multidisciplinary working environment.
- PO5. Use appropriate databases and computational techniques to collect qualitative and quantitative data from investigations relevant to biomedicine, and subsequently analyse and interpret this data to allow testing of hypotheses, and to suggest further lines of investigation.
- PO6. Communicate effectively, concepts related to biomedicine, selecting appropriate content, media and methods for the audience, purpose and subject.

- PO7. Apply ethical awareness to working in Biomedical Science, demonstrating an appreciation of the historical context of the subject and the societal impacts of advances in the Biomedical Science through (for example) debate, appropriate use of sensitive information in written work, evaluation and critique of research and methodology and clinical practices, thereby promoting positive perceptions of Biomedical Science and Biomedical Scientists.
- PO8. Demonstrate ability to use applied knowledge of at least one of the core biomedical science specialist disciplines (Haematology, Clinical Biochemistry, Genetics, Tissue Science, Immunology, Microbiology) to critically evaluate research/clinical/disease data and /or information in the context of biomedical or biomedicine themed research based scientific practice.

Assessment strategy: A variety of assessment methods is incorporated within the programme to cater for a diversity of student skills and preferences. The course team recognises the importance of both formative and summative assessment activity as an integral part of the learning and teaching process.

At each level of study, students are assessed using a framework of skill building based assessments where the expectations and models of submission/presentation build on those explored and utilised in the previous level of study. There are four main categories of skill that our assessments are encouraged to utilise: presentation, writing, analysis, practical-based. These skillsets feed into the programme outcomes to ensure that students are practicing these skills and not just being assessed on them, which is achieved through group work to improve communication and presentations, learning to use research databases and bespoke software and hardware to develop authentic analytical and practical skills for translation in multiple areas of employment practice, and using peer-reviewed research.

Coursework for example, at level 4 a student may put together a case study based poster to assess their ability to arrange and explain laboratory and clinical information to assess their communication and presentation skills, which is then built on at level 5 where they record a short video clip for submission, which at level 6 is taken further in a live presentation or ethical debate. This model persists in other assessment types currently present in the course, including practical portfolios to lab

reports to research projects, short form writing (500 words) to case study write-ups (750-1000 words) to evaluative long form essays (1-2000 words), experimental data analysis to research design methods to research paper reviews and critiques.

Equally in exam based assessments where some level of constraint is normally applied, the study design principles of "know it and understand it, understand it and apply it, apply it and critically evaluate it" are used in building those constrained assessments across the levels of study. For example at level 4, students experience a more Multiple Choice Question (MCQ) and Short Answer Question (SAQ) format of exam based assessment, progressing to short paragraph and essay style description or explanatory answers in level 5, and onto longer form essay in level 6 where critical evaluation and utilising research materials and evidence becomes increasingly important. The pattern, frequency, and combinations of these assessment types may, and is encouraged for a richer student experience, vary at each level and across modules, depending on the theme of the module and depth of learning experienced.

Student support: Students are supported through their programme by their personal tutor; the tutor supports scaffolded assessment in Level 4 and graduate attributes during Level 5. This is reinforced by the addition of a project supervisor during Level 6.

In addition to extensive student support provided by the University, students in the School of Applied Sciences are additionally supported by a Student Coach, an International student Tutor and Widening Participation Coordinators who support minoritised students.

Part B: Programme Structure

Year 1

Full time and Sandwich students must take 120 credits from the modules in Year 1.

Year 1 Compulsory Modules (Full time and Sandwich)

Full time and Sandwich students must take 120 credits from the modules in Compulsory Modules (Full time and Sandwich).

Module Code	Module Title	Credit
USSKCJ-30-0	Biology in Practice 2024-25	30
USSKCK-30-0	Chemistry in Practice 2024-25	30
USSKCM-30-0	Investigating and Communicating Science 2024-25	30
USSKCL-30-0	Skills for Science 2024-25	30

Year 2

Full time and Sandwich students must take 120 credits from the modules in Year 2.

Year 2 Compulsory Modules (Full time and Sandwich)

Full time and Sandwich students must take 120 credits from the modules in Compulsory Modules (Full time and Sandwich).

Module Code	Module Title	Credit
USSKA5-30-1	Biomedical Skills 2025-26	30
USSKA4-30-1	Cells, Biochemistry and Genetics 2025-26	30
USSKA3-30-1	Human Anatomy and Physiology 2025-26	30
USSKA7-30-1	Infection and Disease 2025-26	30

Year 3

Full time and Sandwich students must take 120 credits from the modules in Year 3.

Year 3 Compulsory Modules (Full time and Sandwich)

Full time and Sandwich students must take 60 credits from the modules in Compulsory Modules (Full time and Sandwich).

Module Code	Module Title	Credit
USSJXS-15-2	Applied Scientific Practice 2026-27	15

USSJXR-15-2	Molecular Cell Biology 2026-27	15
USSKAT-30-2	Studies in the Biology of Disease 2026-27	30

Year 3 Optional Modules (Full time and Sandwich)

Full time and Sandwich students must take 60 credits from the modules in Optional Modules (Full time and Sandwich).

Module Code	Module Title	Credit
USSJXU-15-2	Blood Science 2026-27	15
USSKB4-15-2	Cell Signalling 2026-27	15
USSJXV-30-2	Human Physiology 2026-27	30
USSJXQ-15-2	Immunology 2026-27	15
USSKB5-15-2	Medicinal Chemistry 2026-27	15
USSKB6-15-2	Microbial Pathogenesis 2026-27	15
USSKB7-15-2	Molecular Genetics 2026-27	15
USSJXP-15-2	Pharmacology 2026-27	15
USSJXT-15-2	Tissue and Tumour Science 2026-27	15

Year 4

Full time students must take 120 credits from the modules in Year 4.

Sandwich students must take 15 credits from the modules in Year 4 and will elect to spend a year out working for an organization in an appropriate placement to gain relevant experience.

Year 4 Compulsory Module Choice Project (Full time)

Full time students must select 30 credits from the Compulsory Module (Full time)

Module Code	Module Title	Credit
USSKBC-30-3	Research Dissertation Project 2027-28	30

Year 4 Compulsory Module Choice Specialist (Full time)

Full time students must select at least one of the following core specialist modules (30 credits).

Module Code	Module Title	Credit
USSKBN-30-3	Applied Immunology 2027-28	30
USSKBM-30-3	Cellular Pathology and Oncology 2027-28	30
USSKBL-30-3	Clinical Biochemistry 2027-28	30
USSKBK-30-3	Haematology and Transfusion Science 2027-28	30
USSKBH-30-3	Medical Genetics 2027-28	30
USSKBJ-30-3	Medical Microbiology 2027-28	30

Year 4 Compulsory Modules (Sandwich)

Sandwich students must take 15 credits from the modules in Compulsory Modules (Sandwich).

Module Code	Module Title	Credit
USSK57-15-3	Professional Practice in Applied Sciences 2027-28	15

Year 4 Optional Modules (Full time)

Full time students may take up to 60 credits from the modules in Optional Modules (Full time).

Module Code	Module Title	Credit
USSKBY-15-3	Antimicrobial Agents 2027-28	15
USSJXY-15-3	Developmental and Stem Cell Science 2027-28	15
USSKBF-30-3	Genomic Technologies 2027-28	30

USSJYX-15-3	Medical Technology and Enterprise 2027-28	15
USSKCA-15-3	Neuroscience and Neuropharmacology 2027-28	15
USSKBW-15-3	Pathophysiology 2027-28	15
USSKBX-15-3	Pharmacology and Toxicology 2027-28	15
USSJXW-15-3	Physical Activity, Nutrition and Health 2027-28	15

Year 5

Sandwich students must take 105 credits from the modules in Year 5.

Year 5 Compulsory Module Choice Project (Sandwich)

Sandwich students must select 30 credits from the Compulsory Module (Sandwich).

Module Code	Module Title	Credit
USSKBC-30-3	Research Dissertation Project 2028-29	30

Year 5 Compulsory Module Choice Specialist (Sandwich)

Sandwich students must choose at least one of the following core specialist modules (minimum 30 credits).

Module Code	Module Title	Credit
USSKBN-30-3	Applied Immunology 2028-29	30
USSKBM-30-3	Cellular Pathology and Oncology 2028-29	30
USSKBL-30-3	Clinical Biochemistry 2028-29	30
USSKBK-30-3	Haematology and Transfusion Science 2028-29	30
USSKBH-30-3	Medical Genetics 2028-29	30
USSKBJ-30-3	Medical Microbiology 2028-29	30

Year 5 Optional Modules (Sandwich)

Sandwich students may take up to 45 credits from the modules in Optional Modules.

Module Code	Module Title	Credit
USSKBY-15-3	Antimicrobial Agents 2028-29	15
USSJXY-15-3	Developmental and Stem Cell Science 2028-29	15
USSKBF-30-3	Genomic Technologies 2028-29	30
USSJYX-15-3	Medical Technology and Enterprise 2028-29	15
USSKCA-15-3	Neuroscience and Neuropharmacology 2028-29	15
USSKBW-15-3	Pathophysiology 2028-29	15
USSKBX-15-3	Pharmacology and Toxicology 2028-29	15
USSJXW-15-3	Physical Activity, Nutrition and Health 2028-29	15

Part C: Higher Education Achievement Record (HEAR) Synopsis

The Foundation Year gives students an appropriate grounding in the subject areas of biology, chemistry, physics, and mathematics. This grounding, in addition to the development of transferable skills, prepares learners to successfully study at Level 4 and beyond.

At Level 4, students study compulsory modules covering an introduction to the study of human health and disease, alongside basic human anatomy, physiology, molecular cell biology, genetics and microbiology, plus a variety of skills that underpin the programme and are transferable. At Levels 5 & above the programme offers great flexibility of choice for students aiming for scientific careers. At advanced levels, it aligns to biomedical science themes, led by research-active staff within the

School Centre for Research in Biosciences. Students therefore gain a breadth of practical competencies alongside insight into cutting-edge research. This degree creates independent thinkers, graduates with outstanding analytical and problem-solving skills, and equips them for a range of scientific or medical-related careers. The programme offers a placement year, and provides opportunities for students to develop generic skills necessary for employment, such as practical and analytical skills, project management, use of technology and communication media.

Graduates from this programme have passed 360 credits of study and met the learning outcomes and educational requirements consistent with a sound knowledge and understanding of the causes and development of human disease, together with a theoretical and practical knowledge of key methods suitable for its diagnosis and treatment. Having studied central compulsory subject material, core specialist modules, and a research project, graduates are ready for employment within the biomedical science arena, but also in a wide range of other careers, enabled by the transferable skills that they acquire during their studies.

Part D: External Reference Points and Benchmarks

The following reference points and benchmarks have been used in the design of the programme:

QAA UK Quality Code for HE: Framework for higher education qualifications (FHEQ):

The learning outcomes for the programme have been developed with reference to the qualification descriptors used in the QAA Framework for HE Qualifications. The learning outcomes for modules at level 4 and level 5 have been considered to be consistent with the award of a Certificate in Higher Education and a Diploma in Higher Education, respectively. The learning outcomes for the modules at Level 6 are considered consistent with the QAA's descriptor for a higher education qualification at level 6: Bachelor's degree with honours.

Subject benchmark statements:

Levels 4-6 of the curriculum and skills map to the QAA subject benchmark statements for Biomedical Sciences (March 2023) in order to embrace a broad range of scientific and medical knowledge, alongside the research and practical skills that are expected of a graduate in order to become a competent biomedical scientist.

The broadly based core knowledge sub-headings for general inclusion within the Biomedicine benchmark (QAA Statement for Biomedical Sciences, pages 23-27 (March 2023) are listed as human anatomy and physiology, cell biology, biochemistry, genetics genomics and human variation, molecular biology, the nature of disease, bioinformatics, microbiology, immunology, pharmacology, developmental biology and physics/chemistry. All of these subjects are provided within compulsory modules in this programme. This provides students with an integrated knowledge of the human body at a physiological, cellular, molecular and genetic level, in both health and disease. At Level 4, modules provide a foundation of generic biomedical content including scientific and analytical skills, biology of disease, biochemistry, microbiology, and genetics. At Level 5, building on core subjects, there is the introduction of choice around research themes, so that students can develop research interests aligned to their career aspirations. As well as achieving the benchmarking goals of understanding a “multidisciplinary approach to the study of human disease”, students also develop “an awareness of the current methods used for the laboratory investigation, diagnosis and monitoring of disease...” The level of choice extends in Level 6, with more advanced modules aligned to the research core specialist themes “Subject-specific knowledge, understanding and skills” (Cellular Pathology & Oncology, Clinical Biochemistry, Applied Immunology, Haematology & Transfusion Science, Medical Microbiology, and Medical Genetics). These align with those under the QAA Statement for Biomedical Sciences, pages 23-27 (March 2023).

UWE Strategy 2030:

The aim of the School of Applied Sciences is to evolve a portfolio of programmes that align with the UWE 2030 Strategy which states:

“Connecting and working with our local and regional economy, businesses and

communities and international partners to advance knowledge, and to advance the health, sustainability and prosperity of our locality and region”.

“Being digitally advanced, agile and responsive in the way we work, embracing and leading change to create new sustainable opportunities”.

Biomedical Science connects with external partners including business, the National Health Service and communities. In order to achieve high quality and outstanding delivery, our programmes are aligned with quality and professional frameworks (QAA Framework for Higher Education (FHEQ) – see above.

Graduates of the Biomedical Science programme are well equipped to contribute positively to achieving the United Nations Education for Sustainable Development Goals, of particular relevance, biomedical scientists are key to the achievement of:

Goal 1: No Poverty

Economic growth must be inclusive to provide sustainable jobs and promote equality.

Goal 2: Zero Hunger

The food and agriculture sector offers key solutions for development, and is central for hunger and poverty eradication.

Goal 3: Good Health and Well-Being

Ensuring healthy lives and promoting the well-being for all at all ages is essential to sustainable development.

Goal 6: Clean Water and Sanitation

Clean, accessible water for all is an essential part of the world we want to live in.

Goal 8: Decent Work and Economic Growth

Sustainable economic growth will require societies to create the conditions that allow people to have quality jobs.

Goal 13: Climate Action

Climate change is a global challenge that affects everyone, everywhere.

Part E: Regulations

Approved to University Regulations and Procedures.

It is the Award Board's responsibility to determine whether the student's attainment at FHEQ Level 3 is sufficient to progress to Level 4.