



Programme Specification

Biomedical Science [Sep][FT][Frenchay][3yrs]

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Contents

| | |
|--|----------|
| Programme Specification | 1 |
| Section 1: Key Programme Details | 2 |
| Part A: Programme Information | 2 |
| Section 2: Programme Overview, Aims and Learning Outcomes | 3 |
| Part A: Programme Overview, Aims and Learning Outcomes | 3 |
| Part B: Programme Structure..... | 7 |
| Part C: Higher Education Achievement Record (HEAR) Synopsis | 9 |
| Part D: External Reference Points and Benchmarks | 10 |
| Part E: Regulations | 12 |

Section 1: Key Programme Details

Part A: Programme Information

Programme title: Biomedical Science [Sep][FT][Frenchay][3yrs]

Highest award: BSc (Hons) Biomedical Science

Interim award: BSc Biomedical Science

Interim award: DipHE Biomedical Science

Interim award: CertHE Biomedical Science

Awarding institution: UWE Bristol

Affiliated institutions: Not applicable

Teaching institutions: UWE Bristol

Study abroad: No

Year abroad: No

Sandwich year: No

Credit recognition: No

Department responsible for the programme: HAS Dept of Applied Sciences,
Faculty of Health & Applied Sciences

Contributing departments: Not applicable

Professional, statutory or regulatory bodies:

Institute of Biomedical Science (IBMS)

Apprenticeship: Not applicable

Mode of delivery: Full-time

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

For implementation from: 01 September 2022

Programme code: C98013-SEP-FT-FR-C980

Section 2: Programme Overview, Aims and Learning Outcomes

Part A: Programme Overview, Aims and Learning Outcomes

Overview: The BSc (Hons) Biomedical Science programme is a three-year full-time degree, designed 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.

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 Departmental Centre for Research in Biosciences (CRIB):

<http://www1.uwe.ac.uk/hls/research/biosciences/researchareas.aspx>

The programme provides:

An overall educational experience that covers the broad educational requirements for IBMS and Health and Care Professions Council (HCPC) accreditation/registration, and benchmark core specialisms, but being research-informed at advanced levels, also 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.

More specific aims:

The programme integrates a wide range of bioscience subjects in the study of the biology of disease. The combination of modules offered enables students to understand the science of the causes, diagnosis and treatment of disease while working at the cutting edge of biomedical sciences using state-of-the-art equipment and learning support material. The majority of teaching staff are research-active and many have experience of working in the NHS; at Levels 2 and 3, delivery of lectures includes visiting staff from NHS laboratories in the local area.

As well as meeting the benchmark subject areas underpinning the requirement for professional body IBMS accreditation and laboratory biomedical science, the modules are research-informed and where possible are led by the research and professional experience of staff. At Level 1, all modules are compulsory. At Level 2, students are offered some subject module options in addition to the compulsory material; student can begin to select subject areas of particular interest, leading into chosen core specialist themes (e.g. haematology, microbiology, genetics, biochemistry, immunology, oncology) and optional specialist areas (pharmacology,

neuroscience, physiology) at Level 3 - and hence recommended or suggested module combinations that align with employability and career objectives. More entrepreneurial students can choose specialisms of Science Communication or Medical Technology and Enterprise.

Teaching, learning and assessment is enhanced by the use of online quizzes and interactive Blackboard technology, for example, online-assessment and feedback, and the use of open educational resources (and other in-house resources) in flipped classroom scenarios to support practical teaching.

There are opportunities for students to gain learning outside the curriculum, including short Summer Bursary opportunities, Year placements as well as opportunities for students to partake in outreach activities including schools visits and the Bristol Festival of Nature.

Programme Learning Outcomes:

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

Knowledge and Understanding

- A1. Laboratory practical competence.
- A2. Core biomedical science subject areas and a more specialist and deeper understanding of advancing areas of science.
- A3. The context of biomedical sciences and its application to practical problems within healthcare and research arenas.
- A4. The main attributes and the contribution of research and scholarship in their chosen specialist areas of biomedical science.
- A5. Research skills

Intellectual Skills

- B1. Actively question and seek relevant information.
- B2. Compare and contrast information from different sources online and offline.

- B3. Critically evaluate information against hypotheses in a range of research scenarios.
- B4. Actively analyse and apply problem-solving strategies.
- B5. Demonstrate independent self-directed learning, and skills for life-long learning.

Subject/Professional Practice Skills

- C1. Critically observe, analyse and evaluate information arising from a wide range of sources.
- C2. Apply practical approaches to studying biomedical science, and be aware of research governance including safety and good laboratory practice.
- C3. Communicate effectively scientific data and concepts in written and oral form.
- C4. Develop discipline-specific interests by specialising within the programme in relation to subject and/or career aspiration.
- C5. Demonstrate an understanding of the research process through the successful execution of an independent research project.
- C6. To develop, utilise, and demonstrate time management skills that evidence ability to understand, analyse, and communicate scientific information in time sensitive situations to mimic that which may be required of an accredited Biomedical Scientist when end user/patient outcomes depend on such skill.

Transferable Skills and other attributes

- D1. Communicate effectively and appropriately using a variety of methods.
- D2. Critically and statistically present and analyse data arising from various means of inquiry.
- D3. Undertake active learning and development.
- D4. Apply information management skills.
- D5. Practice effective time management and become independent and lifelong learners.
- D6. Evaluate performance of self and others through reflective practice and observation.

Part B: Programme Structure**Year 1**

The student must take 120 credits from the modules in Year 1.

Year 1 Compulsory Modules

The student must take 120 credits from the modules in Compulsory Modules.

| Module Code | Module Title | Credit |
|--------------------|--|---------------|
| USSKA5-30-1 | Biomedical Skills 2022-23 | 30 |
| USSKA4-30-1 | Cells, Biochemistry and Genetics 2022-23 | 30 |
| USSKA3-30-1 | Human Anatomy and Physiology 2022-23 | 30 |
| USSKA7-30-1 | Infection and Disease 2022-23 | 30 |

Year 2

The student must take 120 credits from the modules in Year 2.

Year 2 Compulsory Modules

The student must take 60 credits from the modules in Compulsory Modules.

| Module Code | Module Title | Credit |
|--------------------|---|---------------|
| USSJXS-15-2 | Applied Scientific Practice 2023-24 | 15 |
| USSJXR-15-2 | Molecular Cell Biology 2023-24 | 15 |
| USSKAT-30-2 | Studies in the Biology of Disease 2023-24 | 30 |

Year 2 Optional Modules

The student must take 60 credits from the modules in Optional Modules.

| Module Code | Module Title | Credit |
|--------------------|--------------------------|---------------|
| USSJXU-15-2 | Blood Science 2023-24 | 15 |
| USSKB4-15-2 | Cell Signalling 2023-24 | 15 |
| USSJXV-30-2 | Human Physiology 2023-24 | 30 |

| | | |
|-------------|-----------------------------------|----|
| USSJXQ-15-2 | Immunology 2023-24 | 15 |
| USSKB5-15-2 | Medicinal Chemistry 2023-24 | 15 |
| USSKB6-15-2 | Microbiology 2023-24 | 15 |
| USSKB7-15-2 | Molecular Genetics 2023-24 | 15 |
| USSJXP-15-2 | Pharmacology 2023-24 | 15 |
| USSJXT-15-2 | Tissue and Tumour Science 2023-24 | 15 |

Year 3

The student must take 120 credits from the modules in Year 3.

Year 3 Compulsory Project Modules

Students must choose one of the following project modules:

| Module Code | Module Title | Credit |
|--------------------|---------------------------------------|---------------|
| USSKBC-30-3 | Research Dissertation Project 2024-25 | 30 |
| USSK5K-30-3 | Research Experimental Project 2024-25 | 30 |

Year 3 Compulsory Specialist Modules

Students must choose at least one of the following core specialist modules:

| Module Code | Module Title | Credit |
|--------------------|--|---------------|
| USSKBN-30-3 | Applied Immunology 2024-25 | 30 |
| USSKBM-30-3 | Cellular Pathology and Oncology 2024-25 | 30 |
| USSKBL-30-3 | Clinical Biochemistry 2024-25 | 30 |
| USSKBK-30-3 | Haematology and Transfusion Science 2024-25 | 30 |
| USSKBH-30-3 | Medical Genetics 2024-25 | 30 |
| USSKBJ-30-3 | Medical Microbiology 2024-25 | 30 |

Year 3 Optional Modules

The student may take up to 60 credits from the modules in Optional Modules.

| Module Code | Module Title | Credit |
|--------------------|---|---------------|
| USSKBY-15-3 | Antimicrobial Agents 2024-25 | 15 |
| USSJXY-15-3 | Developmental and Stem Cell Science 2024-25 | 15 |
| USSJYW-15-3 | Epidemiology and Public Health 2024-25 | 15 |
| USSKBF-30-3 | Genomic Technologies 2024-25 | 30 |
| USSJYX-15-3 | Medical Technology and Enterprise 2024-25 | 15 |
| USSKCA-15-3 | Neuroscience and Neuropharmacology 2024-25 | 15 |
| USSKBW-15-3 | Pathophysiology 2024-25 | 15 |
| USSKBX-15-3 | Pharmacology and Toxicology 2024-25 | 15 |
| USSJXW-15-3 | Physical Activity, Nutrition and Health 2024-25 | 15 |
| USSK57-15-3 | Professional Practice in Applied Sciences 2024-25 | 15 |
| USSKCE-15-3 | Science Communication 2024-25 | 15 |

Part C: Higher Education Achievement Record (HEAR) Synopsis

At Level 1, BSc (Hons) Biomedical Science 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 2 & 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 Departmental 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 one and level two 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 3 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 1-3 of the curriculum and skills map to the QAA subject benchmark statements for Biomedical Sciences (November 2015) 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, Section 5 (November 2015)) 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 1, modules provide a foundation of generic biomedical content including scientific and analytical skills, biology of disease, biochemistry, microbiology, and genetics. At Level 2, 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 3, 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, Section 6 (November 2015).

UWE Strategy 2020:

The aim of the Department of Applied Sciences is to evolve a portfolio of programmes that align with the UWE 2020 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.

Part E: Regulations

Approved to University Regulations and Procedures.