



## **Programme Specification**

**Biomedical Science [Sep][FT][Frenchay][4yrs]**

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### **Contents**

<b>Programme Specification.....</b>	<b>1</b>
<b>Section 1: Key Programme Details.....</b>	<b>2</b>
Part A: Programme Information .....	2
<b>Section 2: Programme Overview, Aims and Learning Outcomes .....</b>	<b>3</b>
Part A: Programme Overview, Aims and Learning Outcomes .....	3
Part B: Programme Structure.....	6
Part C: Higher Education Achievement Record (HEAR) Synopsis .....	10
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][4yrs]

**Highest award:** MSci Biomedical Science

**Interim 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 2019

**Programme code:** C98R13-SEP-FT-FR-C98R

## **Section 2: Programme Overview, Aims and Learning Outcomes**

### **Part A: Programme Overview, Aims and Learning Outcomes**

**Overview:** The MSci Biomedical Science programme is a four-year full-time degree designed to provide a comprehensive education for students interested in taking a hands-on approach to studying the biology of disease, and particularly those who have an interest in a research career. 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 with biomedical specialist themes. During the final year of study, students undertake an advanced extended research project alongside academic staff, the majority of whom are research-active as members 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 the Institute of Biomedical Science (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.

A further year of study beyond BSc level to develop and apply advanced research

skills; particularly aimed at students who are interested in careers in research.

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.

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 to an advanced level, and to engage in research at the cutting edge of biomedical sciences using state-of-the-art equipment and learning support material.

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. An extended research project at M-level in the final year, plus teaching in research methods, science communication, project management and current research issues, are designed to prepare MSci graduates for careers in research.

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 skills
- 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

### **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.

<b>Module Code</b>	<b>Module Title</b>	<b>Credit</b>
USSKA5-30-1	Biomedical Skills 2019-20	30
USSKA4-30-1	Cells, Biochemistry and Genetics 2019-20	30
USSKA3-30-1	Human Anatomy and Physiology 2019-20	30
USSKA7-30-1	Infection and Disease 2019-20	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.

<b>Module Code</b>	<b>Module Title</b>	<b>Credit</b>
USSJXS-15-2	Applied Scientific Practice 2020-21	15
USSJXR-15-2	Molecular Cell Biology 2020-21	15
USSKAT-30-2	Studies in the Biology of Disease 2020-21	30

**Year 2 Optional Modules**

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

<b>Module Code</b>	<b>Module Title</b>	<b>Credit</b>
USSJXU-15-2	Blood Science 2020-21	15
USSKB4-15-2	Cell Signalling 2020-21	15
USSJXV-30-2	Human Physiology 2020-21	30
USSJXQ-15-2	Immunology 2020-21	15
USSKB5-15-2	Medicinal Chemistry 2020-21	15

USSKB6-15-2	Microbiology 2020-21	15
USSKB7-15-2	Molecular Genetics 2020-21	15
USSJXP-15-2	Pharmacology 2020-21	15
USSJXT-15-2	Tissue and Tumour Science 2020-21	15

**Year 3**

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

**Year 3 Compulsory Project Modules**

The student must choose one of the following project modules:

<b>Module Code</b>	<b>Module Title</b>	<b>Credit</b>
USSKBC-30-3	Research Dissertation Project 2021-22	30
USSK5K-30-3	Research Experimental Project 2021-22	30

**Year 3 Compulsory Specialist Modules**

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

<b>Module Code</b>	<b>Module Title</b>	<b>Credit</b>
USSKBN-30-3	Applied Immunology 2021-22	30
USSKBM-30-3	Cellular Pathology and Oncology 2021-22	30
USSKBL-30-3	Clinical Biochemistry 2021-22	30
USSKBK-30-3	Haematology and Transfusion Science 2021-22	30
USSKBH-30-3	Medical Genetics 2021-22	30
USSKBJ-30-3	Medical Microbiology 2021-22	30

**Year 3 Optional Modules**

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

<b>Module Code</b>	<b>Module Title</b>	<b>Credit</b>
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USSKBY-15-3	Antimicrobial Agents 2021-22	15
USSJXY-15-3	Developmental and Stem Cell Science 2021-22	15
USSJYW-15-3	Epidemiology and Public Health 2021-22	15
USSKBF-30-3	Genomic Technologies 2021-22	30
USSJYX-15-3	Medical Technology and Enterprise 2021- 22	15
USSKCA-15-3	Neuropharmacology 2021-22	15
USSKBW-15-3	Pathophysiology 2021-22	15
USSKBX-15-3	Pharmacology and Toxicology 2021-22	15
USSJXW-15-3	Physical Activity, Nutrition and Health 2021- 22	15
USSK57-15-3	Professional Practice in Applied Sciences 2021-22	15
USSKCE-15-3	Science Communication 2021-22	15

#### Year 4

The student must take 120 credits from the modules in Year 4.

#### Year 4 Compulsory Modules

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

<b>Module Code</b>	<b>Module Title</b>	<b>Credit</b>
USSJQE-30-M	Current Issues in Applied Sciences 2022-23	30
USSKM6-60-M	Research in Practice 2022-23	60
USSKM5-30-M	Research with Impact 2022-23	30

**Part C: Higher Education Achievement Record (HEAR) Synopsis**

Level 1 comprises modules that cover the basic tenets of anatomy, physiology, cells, genetics, biochemistry and microbiology, in addition to a series of lectures and practical sessions introducing the study of disease. Together with these biomedical science subject areas, students completing Level 1 will have obtained various transferable skills during their biomedical skills module.

At Levels 2 and above the MSci Biomedical Science offers great flexibility of choice for students aiming for scientific careers, particularly in research. 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. The final (M-level) year focuses on the research process, including an extended research project, building on the previous years of study to develop students as independent researchers.

This MSci degree creates graduates who are independent thinkers, with outstanding analytical and problem-solving skills, equipped for a range of scientific or medical-related research 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.

**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. The learning outcomes for the modules in the final (MSci) year are considered consistent with the QAA's descriptor for a higher education Master's Degree qualification. Graduates of the MSci award will have acquired the knowledge and understanding, and gained the intellectual, subject, professional, practical and transferable skills listed in previous sections, and will have developed skills, understanding and critical awareness at an advanced level in the Biomedical Sciences, together with advanced research and communications skills consistent with employment in biomedical research science.

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 MSci is still classified as an undergraduate qualification; there are no additional benchmark statements at MSci level per se.

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).

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.