



PROGRAMME SPECIFICATION

Part 1: Information	
Awarding Institution	University of the West of England, Bristol
Teaching Institution	University of the West of England, Bristol
Delivery Location	University of the West of England, Bristol; Frenchay Campus
Study abroad / Exchange / Credit recognition	None
Faculty responsible for programme	Health and Applied Sciences
Department responsible for programme	Applied Sciences
Professional Statutory or Regulatory Body Links	Institute of Biomedical Science
Highest Award Title	BSc (Hons) Biomedical Science
Default Award Title	BSc (Hons) Biomedical Science
Interim Award Titles	Dip HE Biomedical Science Cert HE Biomedical Science
UWE Progression Route	N/A
Mode of Delivery	FT/PT/SW/Foundation
ISIS code/s	
For implementation from	September 2019 (for all new and existing L0 students)

Part 2: Description

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.

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, 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 requirements for the purposes of the Higher Education Achievement Record (HEAR)

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 1 and beyond. At Levels 2 & above the BSc (Hons) Biomedical Science 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 a 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.

Regulations

A: Approved to [University Regulations and Procedures](#)

It is the Award Board's responsibility to determine whether the student's attainment at level 0 is sufficient to progress to level 1.

Part 3: Learning Outcomes of the Programme

Learning Outcomes: (Levels 0 and 1) (Compulsory modules)	L0 USSKJ-30-0 Biology in Practice	L0 USSKCK-30-0 Chemistry in Practice	L0 USSKCL-30-0 Skills for Science	L0 USSKCM-30-0 People and Science	L1 Anatomy & Physiology (30cr)	L1 Cell Biol, Biochem & Genetics (30cr)	L1 Infection and Disease (30cr)	L1 Biomedical Skills (30cr)
A) Knowledge and understanding of:								
Structure and function of the natural world	■	■	■	■				
The techniques used to gather and critically analyse data in the natural sciences				■				
Laboratory practical (P); Research skills (R)	P	P	P	P	P	P	P	PR
Core biomedical science subject areas and a more specialist and deeper understanding of advancing areas of science					■	■	■	■
The context of biomedical sciences and its application to practical problems within healthcare and research arenas								
The main attributes and the contribution of research and scholarship in their chosen specialist areas of biomedical science								■
(B) Intellectual Skills								
Students will develop the ability to:								
Actively question and seek relevant information	■	■	■	■				
Compare and contrast information from different sources online and offline	■	■	■	■				
Critically evaluate information against hypotheses in a range of research scenarios	■	■	■	■				
Actively analyse and apply problem-solving strategies	■	■	■	■				
Demonstrate independent self-directed learning, and skills for life-long learning	■	■	■	■	■	■	■	■
(C) Subject/Professional/Practical Skills								
Students will develop the ability to:								
Critically observe, analyse and evaluate information arising from a wide range of sources	■	■	■	■				
Apply practical approaches to studying (biomedical) science, and be aware of research governance including safety and good laboratory practice	■	■	■	■	■	■	■	■
Communicate effectively scientific data and concepts in written and oral form	■	■	■	■	■	■	■	■
Develop discipline-specific interests by specialising within the programme in relation to subject and/or career aspiration								
Demonstrate an understanding of the research process through the successful execution of an independent research project								
(D) Transferable skills and other attributes								
Students will develop the ability to:								
Communicate effectively and appropriately using a variety of methods	■	■	■	■	■	■	■	■
Critically and statistically present and analyse data arising from various means of inquiry	■	■	■	■			■	■
Undertake active learning and development	■	■	■	■	■	■	■	■
Apply information management skills	■	■	■	■	■	■	■	■
Practice effective time management and become independent and lifelong learners	■	■	■	■	■	■	■	■
Evaluate performance of self and others through reflective practice and observation				■				■

Part 3: Learning Outcomes of the Programme (cont'd)

Learning Outcomes: (Levels 2, including L2 Optional – O – modules)	L2 Applied Scientific Practice (15cr)	L2 Molecular Cell Biology (15cr)	L2 Studies in the Biol of Disease (30cr)	L2 O Pharmacology	L2 O Immunology	L2 O Molecular Genetics	L2 O Tissue and Tumour Science	L2 O Medicinal Chemistry	L2 O Blood Science	L2 O Microbiology	L2 O Cell Signaling	L2 O Human Physiology (30cr)
A) Knowledge and understanding of:												
Structure and function of the natural world												
The techniques used to gather and critically analyse data in the natural sciences												
Laboratory practical (P); Research skills (R)	R	P	P	P	P	P	P	P	P	P	P	P
Core biomedical science subject areas and a more specialist and deeper understanding of advancing areas of science												
The context of biomedical sciences and its application to practical problems within healthcare and research arenas												
The main attributes and the contribution of research and scholarship in their chosen specialist areas of biomedical science												
(B) Intellectual Skills												
Students will develop the ability to:												
Actively question and seek relevant information												
Compare and contrast information from different sources online and offline												
Critically evaluate information against hypotheses in a range of research scenarios												
Actively analyse and apply problem-solving strategies												
Demonstrate independent self-directed learning, and skills for life-long learning												
(C) Subject/Professional/Practical Skills												
Students will develop the ability to:												
Critically observe, analyse and evaluate information arising from a wide range of sources												
Apply practical approaches to studying (biomedical) science, and be aware of research governance including safety and good laboratory practice												
Communicate effectively scientific data and concepts in written and oral form												
Develop discipline-specific interests by specialising within the programme in relation to subject and/or career aspiration												
Demonstrate an understanding of the research process through the successful execution of an independent research project												
(D) Transferable skills and other attributes												
Students will develop the ability to:												
Communicate effectively and appropriately using a variety of methods												
Critically and statistically present and analyse data arising from various means of inquiry												
Undertake active learning and development												
Apply information management skills												
Practice effective time management and become independent and lifelong learners												
Evaluate performance of self and others through reflective practice and observation												

Part 3: Learning Outcomes of the Programme (cont'd)							
Learning Outcomes: (Level 3) (Project/Core specialisms)	L3 Research Dissertation OR Research Experimental Project	L3 Haematology & Transfusion Science	L3 Cell Pathology & Oncology	L3 Applied Immunology	L3 Clinical Biochemistry	L3 Medical Microbiology	L3 Medical Genetics
A) Knowledge and understanding of:							
Laboratory practical competence							
Core biomedical science subject areas and a more specialist and deeper understanding of advancing areas of science	 						
The context of biomedical sciences and its application to practical problems within healthcare and research arenas							
The main attributes and the contribution of research and scholarship in their chosen specialist areas of biomedical science	 						
(B) Intellectual Skills							
Students will develop the ability to:							
Actively question and seek relevant information	 						
Compare and contrast information from different sources online and offline	 						
Critically evaluate information against hypotheses in a range of research scenarios	 						
Actively analyse and apply problem-solving strategies	 						
Demonstrate independent self-directed learning, and skills for life-long learning	 						
(C) Subject/Professional Practical Skills							
Students will develop the ability to:							
Critically observe, analyse and evaluate information arising from a wide range of sources	 						
Apply practical approaches to studying biomedical science, and be aware of research governance including safety and good laboratory practice							
Communicate effectively scientific data and concepts in written and oral form	 						
Develop discipline-specific interests by specialising within the programme in relation to subject and/or career aspiration	 						
Demonstrate an understanding							

of the research process through the successful execution of an independent research project									
(D) Transferable skills and other attributes									
Students will develop the ability to:									
Communicate effectively and appropriately using a variety of methods									
Critically and statistically present and analyse data arising from various means of inquiry									
Undertake active learning and development									
Apply information management skills									
Practice effective time management and become independent and lifelong learners									
Evaluate performance of self and others through reflective practice and observation									

Part 3: Learning Outcomes of the Programme (cont'd)											
Learning Outcomes: (Level 3) (Optional modules "O")	L3 O Pharmacology & Toxicology	L3 O Antimicrobial Agents	L3 O Pathophysiology	L3 O Physical Activity, Nutrition and Health	L3 O Neuroscience & Neuropharmacology	L3 O Science Communication	L3 O Epidemiology & Public Health	L3 O Development & Stem Cell Science	L3 O Medical Technology & Enterprise	L3 O Genomic Technologies	L3 O Professional Practice in Applied Sciences
	A) Knowledge and understanding of:										
Laboratory practical competence											
Core biomedical science subject areas and a more specialist and deeper understanding of advancing areas of science											
The context of biomedical sciences and its application to practical problems within healthcare and research arenas											
The main attributes and the contribution of research and scholarship in their chosen specialist areas of biomedical science											
(B) Intellectual Skills											
Students will develop the ability to:											
Actively question and seek relevant information											

Compare and contrast information from different sources online and offline	■	■	■	■	■	■	■	■	■	■	■
Critically evaluate information against hypotheses in a range of research scenarios	■	■	■	■	■	■	■	■	■	■	■
Actively analyse and apply problem-solving strategies	■	■	■	■	■	■	■	■	■	■	■
Demonstrate independent self-directed learning, and skills for life-long learning	■	■	■	■	■	■	■	■	■	■	■
(C) Subject/Professional/ Practical Skills											
Students will develop the ability to:											
Critically observe, analyse and evaluate information arising from a wide range of sources	■	■	■	■	■	■	■	■	■	■	■
Apply practical approaches to studying biomedical science, and be aware of research governance including safety and good laboratory practice	■										■
Communicate effectively scientific data and concepts in written and oral form	■	■	■	■	■	■	■	■	■		■
Develop discipline-specific interests by specialising within the programme in relation to subject and/or career aspiration	■	■	■	■	■	■	■	■	■		■
Demonstrate an understanding of the research process through the successful execution of an independent research project											
(D) Transferable skills and other attributes											
Students will develop the ability to:											
Communicate effectively and appropriately using a variety of methods	■	■	■	■	■	■	■		■		■
Critically and statistically present and analyse data arising from various means of inquiry	■							■			■
Undertake active learning and development	■	■	■	■	■	■	■	■	■		■
Apply information management skills	■	■	■	■	■	■	■	■	■		■
Practice effective time management and become independent and lifelong learners	■	■	■	■	■	■	■	■	■		■
Evaluate performance of self and others through reflective practice and observation							■				■

Part 4: Programme Structure

This structure diagram demonstrates the student journey from Entry through to Graduation for a typical **full time undergraduate student** including: level and credit requirements, interim award requirements, module diet including compulsory and optional modules

ENTRY		Compulsory Modules	Optional Modules	Awards
Level 0		Biology in Practice USSKCJ-30-0	None	Interim award: None 120 credits at Level 0 Successful completion of all level 0 modules required to permit progression to level 1.
		Chemistry in Practice USSKCK-30-0		
		Skills for Science USSKCL-30-0		
		People and Science USSKCM-30-0		
Level 1		Compulsory Modules Infection and Disease USSKA7-30-1	None	Interim award: Cert HE Biomedical Science Credit Requirements: 240 credits At least 100 credits at level 1 or above. 120 credits at level 0
		Biomedical Skills USSKA5-30-1		
		Human Anatomy & Physiology USSKA3-30-1		
		Cells Biochemistry and Genetics USSKA4-30-1		
Level 2		Compulsory Modules Studies in the Biology of Disease USSKAT-30-2	Optional Modules Pharmacology USSJXP-15-2	Interim award: Dip HE Biomedical Science Credit requirements: 360 credits At least 100 credits at level 2 or above. At least 120 credits at level 1 or above. 120 credits at level 0
			Immunology USSJXQ-15-2	
			Molecular Genetics USSKB7-15-2	
		Molecular Cell Biology USSJXR-15-2	Tissue and Tumour Science USSJXT-15-2	
			Medicinal Chemistry USSKB5-15-2	
			Blood Science USSJXU-15-2	
		Applied Scientific Practice USSJXS-15-2	Microbiology USSKB6-15-2	
		Cell Signalling USSKB4-15-2		

		Human Physiology USSJXV-30-2	
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Placement year: Students may elect to spend a year out working for an organization in an appropriate placement to gain relevant experience. Credit is achieved through the USSK57-15-3 Professional Practice in Applied Sciences module.

	Compulsory Modules	Optional Modules	Interim Awards	
	Project module + ≥ 1 *Core specialist modules			
	Research Dissertation Project USSKBC-30-3 OR Research Experimental Project USSK5K-30-3	Pharmacology & Toxicology USSKBY-15-3 Antimicrobial Agents USSKBY-15-3	<p>Interim award:</p> <p>BSc Biomedical Science</p> <p>Credit requirements: 420 credits</p> <p>At least 60 credits at level 3 or above.</p> <p>At least 100 credits at level 2 or above.</p> <p>At least 140 credits at level 1 or above.</p> <p>120 credits at level 0</p> <p>HIGHEST AWARD:</p> <p>BSc (Hons) Biomedical Science</p> <p>Credit requirements: 480 credits</p> <p>At least 100 credits at level 3 or above.</p> <p>At least 100 credits at level 2 or above.</p> <p>At least 140 credits at level 1 or above.</p> <p>120 credits at level 0</p>	
	*Haematology & Transfusion Science USSKBK-30-3	Pathophysiology USSKBW-15-3		
	*Clinical Biochemistry USSKBL-30-3	Physical Activity, Nutrition & Health USSJXW-15-3		
	*Medical Microbiology USSKBJ-30-3	Neuroscience & Neuropharmacology USSKCA-15-3		
	*Applied Immunology USSKBN-30-3	Science Communication USSKCE-15-3		
	*Medical Genetics USSKBH-30-3	Epidemiology and Public Health USSJYW-15-3 Developmental and Stem Cell Science USSJYX-15-3 Medical Technology and Enterprise USSJYX-15-3		
	*Cellular Pathology & Oncology USSKBM-30-3	Genomic Technologies USSKBF-30-3 Professional Practice in Applied Science USSK57-15-3		
Level 3				

Part time:

Part-time students simply take 60 credits per year; so Level 1, Level 2 and Level 3 are each taken over 2 years. The Research Project is taken in the last year of study.

Part 5: Entry Requirements

The University's Standard Entry Requirements apply:

48 UCAS Tariff Points for the year of entry taking as a base entry point GCSE grade C/4 or above in English Language, Mathematics and Double Science. There is an expectation that prospective students will have studied science beyond GCSE, with a minimum of one A-Level or equivalent. However the course is designed to accept a wide range of people with different educational backgrounds; non-standard applicants are considered on a case-by-case basis.

Tariff points as appropriate for the year of entry - up to date requirements are available through the [courses database](#).

Part 6: Reference Points and Benchmarks

Set out which 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).

[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.

[University policies](#)

University teaching and learning ethos.

In line with the University’s teaching and learning ethos, this programme takes a student-centred approach to learning by allowing students to take control of aspects of their learning and providing a learning environment that stimulates active participation and engagement in the learning process. The programme seeks to create an environment that stimulates students to take responsibility for aspects of their learning, while lecturers facilitate that learning. The module learning outcomes are designed to ensure that students meet the overall programme learning outcomes by completion.

A variety of assessment methods is incorporated within the programme to cater for a diversity of student strengths and abilities. The course team recognises the importance of both formative and summative assessment activity as an integral part of the learning and teaching process. All assessments comply with the University Assessment Policy, Academic Regulations and Procedures and the Work-based Learning Policy (<http://www1.uwe.ac.uk/aboutus/policies>).

Research themes underpinning the programme

Academic staff involved in the BSc Biomedical Science programme come from a diversity of backgrounds including industry, healthcare and research. At Levels 2 and 3 the modules are strongly underpinned by the research expertise of the team. The majority of staff involved are research-active and the Faculty strongly supports the research activities, particularly within the Centre for Research in Biosciences (CRIB). Within the Level 3 core biomedical subject specialisms, and the Level 3 research project, research themes reflect staff strengths.

External collaborator and outreach

The BSc Biomedical Science degree is accredited through the IBMS, and up-to-date undergraduate module core content and choice therefore remains important for those considering continuing professional development. This necessitates ongoing and close liaison with employers of Biomedical Science graduates and post-graduates. This is extremely important and is achieved in the following ways:

- A culture of two-way communication exists between University academic staff and biomedical scientists within the South West, in particular the Joint Training Officers (JTO) group.
- UWE has representation on the local IBMS Branch Committee and several of the associated discussion groups. These and many other opportunities for sharing ideas and views exist and are actively used to the advantage of all parties.
- Practitioners are actively involved in the design, delivery and continued development of the Biomedical Science programme. Similarly, service users are consulted on a regular basis to ensure that the programme delivers education and training that matches service needs.
- The Joint Training Officer's Committee monitors and advises on the operation of any available IBMS accredited training places, in accordance with agreed standards and policies. In addition, this committee provides a valuable forum for practitioners' views on the undergraduate provision, and for discussion pertaining to development of the degree programme.

Academic staff supervising sandwich (year-long) placements via electronic e-portfolio sharing, onsite placement visits; and shorter term local placements or internships; these facilitate the development of collaborations, and achieve a valuable professional "voice" that advises all of our programmes.

FOR OFFICE USE ONLY

First CAP Approval Date	19 November 2015			
Revision Approval Date	28/11/2018	Version	3	PER 28/11/2018 – see PER outcome report
Next Periodic Curriculum Review due date				
Date of last Periodic Curriculum Review	28/11/2018			