

### **ACADEMIC SERVICES**

#### PROGRAMME SPECIFICATION

Part 1: Basic Data		
Awarding Institution	University of the West of England	d, Bristol
Teaching Institution	University of the West of England	d, Bristol
Delivery Location	Frenchay and Glenside Campus	es
Faculty responsible for programme	Health and Applied Sciences	
Department responsible for programme	Applied Sciences (DAS)	
Modular Scheme Title	Any faculty modular scheme link	ing named programmes
Professional Statutory or Regulatory Body Links	Institute of Biomedical Science	
Highest Award Title	BSc (Honours) Biomedical Scier	nce
Default Award Title		
Fall-back Award Title		
Interim Award Titles	BSc Biomedical Science Dip HE Biomedical Science Cert HE Biomedical Science	
UWE Progression Route	N/A	
Mode(s) of Delivery	FT / SW / PT	
Codes	UCAS: New code will be provided centrally	
Relevent OAA Cubicat	ISIS2:	HESA:
Relevant QAA Subject Benchmark Statements	Bioscience and Biomedical Sc	ience

## Part 2: Educational Aims of the Programme

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

The programme combines theoretical and laboratory approaches to understanding the human body and disease, and at more advanced levels is research-informed, 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:

- 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

## Part 2: Educational Aims of the Programme

sandwich degree option.

- graduates with an accredited degree route with the possibility of a career as a Biomedical Scientist, following training, during a sandwich year or after graduation, at an accredited NHS laboratory, completion of a Registration Training Portfolio, and approval by the Health and Care Professions Council.
- 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 modules are research-informed and where possible are led by the research and professional experience of staff. After passing compulsory modules at Level 1, at Levels 2 and 3, students have module options and can choose to develop a specialist theme (e.g. haematology, genetics, microbiology, cell pathology, pharmacology, immunology) according to their interest and future career aspirations. Broader additional options include science communications, and enterprise.

Teaching, learning and assessment is enhanced by the use of 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.

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

The BSc (Hons) Biomedical Science degree, accredited by the Institute of 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, and graduates with outstanding analytical and problem-solving skills, equipped for a range of scientific or medical-related careers. The programme provides opportunities for students to develop generic skills necessary for employment, including practical and analytical skills, project management, use of technology and communication media; student can also opt to take a placement year in a working environment.

# Part 3: Learning Outcomes of the Programme (Levels 1 and 2)

The award route provides opportunities for students to develop and demonstrate knowledge and understanding, qualities, skills and other attributes in the following areas:

Learning Outcomes: (Levels 1 and 2, including L2 Optional – O – modules)	L1 Anatomy & Physiol	L1 Cell Biol, Biochem & Genetics	L1 Pathophysiol of Disease	L1 Biomedical Skills	L2 Practice & Comms of Science	L2 Physiol & Immunol Systems	L2 Studies in the Biol of Disease	L2 O Cell Signalling	L2 O Drugs and Disease	L2 O Microbiology	L2 O Molecular Genetics	L2 O Medicinal Chemistry	
A) Knowledge and understanding of:		Ţ	Ţ	T	·	······	T	·	·	·			
Laboratory practical (P); Research skills (R)	Р	Р	Р	P R	R	Р	Р			Р	Р	Р	
Core biomedical science subject areas and a more specialist and deeper understanding		L	L										

arning Outcomes of the Programr	iie (I	Leve	15 1 6	aliu z	-)							
of advancing areas of science	Ī										Ī	T
The context of biomedical sciences and its		·	-						<u> </u>	<u> </u>		<u> </u>
application to practical problems within					•	-	-	-	-	•	-	-
healthcare and research arenas												
The main attributes and the contribution of		·		I								
research and scholarship in their chosen				-	•	-	-	-	-	•	-	-
specialist areas of biomedical science												
(B) Intellectual Skills		L							İ	.i		
Students will develop the ability to:		T		T	Ţ		T	· · · · · · · · · · · · · · · · · · ·	Ţ	ī		
Actively question and seek relevant		-	-									<b>-</b>
information					-	-		-	-	•	=	-
Compare and contrast information from		-										<b></b>
different sources online and offline					•	-		-	•	•	=	-
Critically evaluate information against		-		-							- <del>                                     </del>	
hypotheses in a range of research										•	-	
scenarios												
Actively analyse and apply problem-solving					ļ							ł <b></b>
strategies										•	-	
Demonstrate independent self-directed					-					-		<b>-</b>
learning, and skills for life-long learning		•	•		•	•	•			•		-
(C) Subject/Professional/Practical Skills								<u>i</u>	<u> </u>	<u> </u>		
Students will develop the ability to:		· ·			· · · · · · · · · · · · · · · · · · ·			· · · · · · · · · · · · · · · · · · ·	·			
			-						-	-	- <del> </del>	<del></del>
Critically observe, analyse and evaluate information arising from a wide range of										•	-	
J J												
Apply practical approaches to studying		-										<u></u>
											=	
(biomedical) science, and be aware of												
research governance including safety and												
good laboratory practice		-			-						- <del> </del>	
Communicate effectively scientific data and							•			•		-
concepts in written and oral form										-	- <del> </del>	<del></del>
Develop discipline-specific interests by										•	-	
specialising within the programme in												
relation to subject and/or career aspiration										ļ		
Demonstrate an understanding of the												
research process through the successful												
execution of an independent research												
project (D) Transferable skills and other		.i		<u>i</u>	.i			.i	İ	<u> </u>		
attributes												
					· ·		· T	· ·	Ţ	Ţ		
Students will develop the ability to:		-							-	-	- <del> </del>	<del>                                     </del>
Communicate effectively and appropriately										•	-	
using a variety of methods												
Critically and statistically present and												
analyse data arising from various means of												
inquiry	ļ <b></b>	ļ.,		- <b></b>	ļ.,	-	- <b></b>			-		ļ <b></b>
Undertake active learning and development	<b></b>	<b></b>			<b>↓</b>					<b></b>		<b>↓ 耳</b>
Apply information management skills	<b></b>	<b>.      </b>			<b>↓</b> ▮	<b></b>	<b>↓</b>			<b></b>	<b> </b>	<b>↓ 耳</b>
Practice effective time management and		L		I								•
become independent and lifelong learners												
Evaluate performance of self and others			-		<del> </del>	+	-			-		<u> </u>
through reflective practice and observation												
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# Part 3: Learning Outcomes of the Programme (Level 3)

The award route provides opportunities for students to develop and demonstrate knowledge and understanding, qualities, skills and other attributes in the following areas:

Learning Outcomes: (Level 3)  A) Knowledge and understanding of:	9,7	L3 Haematology L3 Cell Pathology & Oncology	L3 Immunology	L3 Clinical Biochemistry	L3 Medical Microbiology	L3 Medical Genetics	L3 O Pharmacology & Toxicology	L3 O Genomic Technologies	L3 O Antimicrobial Agents	L3 O Pathophysiology	L3 O Neuropharmacology	L3 O Scientific Frontiers & Enterprise	L3 O Scientific Communication	
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t 3: Learning Outcomes of the Prog	ramm	ie (L	.evel	3)									
Laboratory practical competence													1
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							I						
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:		<u> </u>	T	Ţ	1	T	Ţ	T.	1			 	
Actively question and seek relevant information													
Compare and contrast information from different sources online and offline		I		I	I		I	I	I			I	
Critically evaluate information against hypotheses in a range of research scenarios	• •												
Actively analyse and apply problem-solving strategies		I	I		I	I	I	İ	I				
Demonstrate independent self-directed learning, and skills for life-long learning													
(C) Subject/Professional/Practical Skills Students will develop the ability to:				Ī						I			
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	•	I			I								
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				<u> </u>			<u> </u>	<u> </u>					
Students will develop the ability to:													
Communicate effectively and appropriately using a variety of methods		I			I		I	L	I	I			
Critically and statistically present and analyse data arising from various means of inquiry	•												
Undertake active learning and development													
Apply information management skills		I		I	I	I	I	I	I	I			
Practice effective time management and become independent and lifelong learners		I									<b>I</b>		
Evaluate performance of self and others through reflective practice and observation													

Teaching and learning strategies to enable learning outcomes to be achieved and demonstrated

### Laboratory resources

The Faculty has a well-equipped range of general laboratories, specialised scientific equipment and specialist facilities appropriate for teaching and research in biosciences and biomedicine. Support for laboratory-based scientific inquiry is enhanced by research methods modules each year - Biomedical Skills; Practice and Communication of Science (statistics module); Research Project. Students develop a range of key skills required of a scientist, including systematic

literature searches, critical review, research methodology and design, statistical and data handling, problem-solving, and IT.

In years 2 and 3, students have the option to pursue research interests and can select module options accordingly aligned to key specialisms and employability themes. They can select a research project to focus on specialist laboratory techniques and study the underpinning theory to underpin their future career choice, e.g. as a research scientist, Toxicologist, Pharmacologist, or specialist biomedical scientist through IBMS-specialist disciplines of genetics, haematology, cell pathology, immunology, microbiology or biochemistry.

# Teaching and Learning strategy

At UWE Bristol, the learning and teaching policy requires a minimum average of 12 hours per week contact time throughout the full undergraduate programme. This includes a range of face-to-face activities, in addition to online learning and independent learning that enable the learning outcomes to be achieved and demonstrated. The following activities take place:

- 1) Scheduled learning lectures, seminars, tutorials, project supervision, practical classes. Activities may include field trips and external visits, or work based learning on short-term internships or longer-term placements. Scheduled sessions may vary slightly depending on the module choices made.
- 2) Independent learning students are provided with essential reading and online supplementary materials, and are supported in their academic development through formative assessment, assignment preparation and completion. Students are encouraged to develop their scientific interests by attending departmental research seminars and external events.
- 3) Placement learning students may experience a UWE internship, vocational placement or year-long placement (national or international).

### Supporting student transition and personal development

New students are supported by a series of initial events including a week-long induction, timetabled introductions to the programme and modules.

Each student is supported throughout university by an Academic Personal Tutor (APT). The 'APT' sessions are a timetabled series of tutorials leading students through the development of basic academic skills (e.g. learning how to be a successful student), and also encompassing employability. Students meet tutors fortnightly in Levels 1 and 2 as a group, and individually for one-to-one sessions (particularly at L3).

All students are provided with essential and extra-curricular programme and university-wide information through a Blackboard Programme Shell. Through this interface students access their Student Handbooks which provides an introduction to the University and Faculty, alongside all the relevant support services, regulations and procedures. At each level, induction is provided to enable students to plan their study of modules as effectively as possible. Assessment maps show all deadlines across the academic year. In addition to the overarching Student Handbook, students receive inductions and handbooks at the start of the year relevant to each module.

Students are further supported during their time at UWE by student advisors and module leaders. Guidance on year issues is overseen by the Programme Leader, who is supported by the Teaching Team and AHoD. Issues relating to groups of students are dealt with through the Student Rep / Staff Forum (SRSF) that includes student representatives, who also meet with the Programme Leader on a regular basis.

Students who elect to undertake a placement year, are allocated a placement tutor who will

maintain contact, plan a visit where possible, and provide support and liaise with work supervisors. For all students, access to academic staff and the student advisors is via e-mail or by personal access, with most staff offering an office-hours policy facilitating the booking of appointments. The programme welcomes mature students and students with disabilities. When possible, and following individual consultation, adjustments are made to practical and fieldwork to allow all students to achieve the learning outcomes of the programme. The central University counselling and support services provide assistance and guidance for students with disabilities and issues guidance to Module Leaders via Programme Leaders in making provision for students' reasonable adjustments.

## **Employability**

Employability skills and opportunities are developed from day 1, and UWE provides scope for students to apply for voluntary activities, paid internships and external placements. Students have the opportunity to undertake a placement in their third year as part of the sandwich degree option. A placement tutor is allocated and makes planned visits to provide support and to liaise with work place supervisors and assessors. Students on placement may take an optional Professional Practice Module which is managed through our bespoke online system called "Pebblepad", an innovative web-based interface designed to support, capture and reward placement learning.

Where students are able to gain a placement position within a National Health Service laboratory, and have the opportunity to complete their IBMS Registration Training Portfolio, they are eligible to apply to the Health and Care Professions Council (HCPC) for registration as a Biomedical Scientist.

The University Central Careers Service provides specialist subject advice, offering one-to-one sessions and regular drop-in sessions. Enhancement opportunities such as becoming a student ambassador, voluntary work and engaging with enterprise activity are available to national and international students alike.

## Students with specialist needs

In addition to a personal tutor who is a student's first port of call, there is the university Disability Service that supports and guides on a range of non-curricular issues including welfare, disability and psychological support and counselling. Students with disabilities or learning differences are needs-assessed, and any specific learning support measures can be implemented, e.g. in the classroom or at examinations, and through support of the programme team.

## Library and technology enhanced learning

The library at Frenchay campus provides an extensive range of literature for the programme, and students have support from a subject-specific librarian. Students have 24-hour access to computers, and IT support services are available from the University's Computing Helpdesk.

## Description of any Distinctive Features

### Hands-on science!

The Department of Applied Sciences prides itself on an outstanding level of practical provision.. In years 1 and 2, nine out of the 12 modules offer integrated laboratory investigation. This degree is offered as a "sandwich" option should students wish to gain more substantial laboratory experience in a working environment. Most of the academic staff are research-active, and additional paid summer research internships are available to students to enhance their laboratory/practical experience.

### A scientific grounding upon which to specialize

The Programme offers:

At **Level 1**; all modules are compulsory and are designed to provide students with the requisite underpinning scientific skills and knowledge to develop as biomedical scientists.

At **Level 2**, three compulsory modules consolidate the requisite biomedical science subject areas, required to understand the biology of disease, while additional optional modules are provided for students to begin to follow areas of particular interest to them.

At **Level 3**, six core specialist modules are offered (minimum of one required for IBMS accreditation), alongside a range of optional complimentary modules. An independent research project is also undertaken, enabling students to apply the knowledge and skills acquired at Levels 1 and 2 to their own independent research.

Overall, there is a strong practical provision providing subject-specific learning and generic scientific skills to enhance employability through experiential learning (learning by doing).

#### Research and innovation

Students have module choices based around departmental research themes in years 2 and 3. The Research Experimental Project module gives students the opportunity to engage in a research project working alongside active researchers and post-graduate students in areas including medical genetics, infection and immunity, pharmacology, haematology, molecular genetics, cell signaling and cancer biology/cell pathology. In addition, students can attend the Centre for Research in Bioscience (CRIB) seminars and research conference events, as well as other research events that attract external speakers. For many of the final year modules, specialist teaching involves contributions from external expert scientists and practitioners.

The Faculty has a longstanding investment in web-based support for teaching and learning with a learning technologist team working alongside academic staff. Supplementary learning resources and access to formative quizzes so students can test their knowledge and understanding is available through Blackboard. The department has a bespoke experiential learning platform supporting placements (Pebblepad); anatomy and physiology teaching is enhanced by innovative 3D software.

### Teaching and Learning, Technology Enhanced Learning (TEL)

In order to support students during their transition to HE and to help students become independent learners, taught sessions at Levels 0 & 1 are a mixture of interactive lectures, tutorials, workshops, laboratory and computer practicals. During these years students are taught the skills necessary to engage with appropriate technologies to allow a gradual move towards facilitated learning at Level 2 and Final Year. The taught sessions at UWE utilise TEL to support a pedagogy of Inductive Learning where the students engage in facilitated activities such as debates, problem based learning, group working, and research. Integral to this programme is the use of subject-based as well as generic technologies. Furthermore, research equipment used for the acquisition and manipulation of data is increasingly integrated with IT infrastructure. In addition, modern technologies are incorporated as vehicles of learning (e.g. blogs, web pages, databases) and as vehicles for learning through assessment (e.g. online portfolios, online tests, wikis, press releases and poster presentations). A map showing the use of TEL in presenting subject knowledge, in subject delivery and in subject assessment is included in the Programme Handbook, which is available on Blackboard.

#### Part 5: Assessment

Approved to University Regulations and Procedures

## Assessment Strategy

Assessment strategy to enable the learning outcomes to be achieved and demonstrated:

One of the four ambitions of the new UWE 2020 Strategy is to become the best university for:

"Professionally recognised and practice-oriented programmes, which contribute to an outstanding learning experience and generate excellent graduate employment opportunities and outcomes for all students".

(http://www1.uwe.ac.uk/aboutus/visionandmission/strategy.aspx).

The BSc (Hons) Biomedical Science is a professionally accredited and research-oriented degree programme, and the range and types of assessments underpin the personal and professional skills of the science employment sector. The ethos underlying the programme is to generate good quality researchers, and so many assessments focus on developing student scientific writing skills, and/or involve data- and statistical analysis, usually writing up data acquired in laboratory practicals, or based on a researcher's own data.

The assessment strategy maps with the UWE regulations, and the assessment outcomes are consistent with the awards of Certificate, Diploma or Degree in accordance with the QAA Framework for Higher Education Qualifications. Graduates will achieve the personal and professional skills and underpinning knowledge listed below.

The subject requirements as framed by the IBMS and QAA Subject Benchmarks (Biomedical Science and Bioscience) build from Years 1 to 3, from a basic foundation in bioscience knowledge and analytical skills, through to Year 3 where more specialist choices are provided at an advanced level; these are informed by the research interests of staff (e.g. Cancer Biology, Infection and Immunity, Intracellular signalling/Alzheimer's Disease/Regenerative medicine), as well as the IBMS specialisms (Cellular Pathology, Clinical Biochemistry, Immunology, Haematology & Transfusion, Medical Microbiology, and Genetics).

Alignment of assessment strategy with learning outcomes is as follows:

# Subject knowledge and understanding:

Gained through face-to-face and independent learning opportunities, subject knowledge are assessed through coursework, examinations and laboratory tasks. Activities include research data analysis, desktop research, scientific writing, and oral and poster communication. Assessment methods, as specified in each module guide, are designed to test the various learning outcomes.

#### Intellectual skills and ability:

Through a range of formative and summative assessment opportunities, the student develops intellectual skills demonstrating subject and research understanding, beginning at Level 1, and building up to critical thinking and problem solving at Level 3. The level of independence and reflective practice also advances from year to year. The Research Project is designed to permit students to demonstrate achievement of all the learning outcomes A-D (see Part 3).

## Subject, Professional and Practical Skills

To critically observe, apply approaches, communicate and demonstrate broader scientific interests, these skills are taught progressively throughout the levels of the programme. At Level 1, basic skills (literacy, numeracy, safe laboratory practices) are developed through prescribed

#### Part 5: Assessment

exercises. At Level 2, more advanced and summative practical work and exercises occur. At Level 3, in-depth assessments and the Research Project are pivotal to the acquisition and consolidation of requisite practical and professional skills. Assessments mirror this approach: at Level 1 they are more task-based through practical reports and coursework; more individual elements are introduced at Level 2 with oral and poster presentations; at Level 3 dissemination of research outputs is achieved and assessed through an oral poster defence, and a written dissertation.

#### Transferable Skills and other attributes

Students develop transferable skills (independent learning, IT, time-management, literacy, numeracy and reflective practice) within each module and explicitly through skills modules each year. Through formative assessment, students develop skills of the reflective practitioner, and coursework feedback builds confidence and independent learning. Assessments include individual activities (essays, case studies, oral presentations) and group work (practicals and presentations). IT skills are honed through online assessment and data analysis tasks. All are honed through the final year independent Research Project, where students are encouraged to manage their own time and objectives.

## **Assessment Map**

The programme encompasses a range of **assessment methods** detailed in the following assessment map:

# **Assessment Map for Biomedical Science**

		Unseen Written Exam	In-class Written Test	Practical Exam/Skills	Oral assessment and/or presentation	Written Assignment (essay or case study)	Written Assignment (data and statistics)	Dissertation	(Lab/Practical) Portfolio
Compule	USSKA3-30-1 Anatomy & Physiology	A (40)		B (60)					
Compuls ory Modules	USSKA5-30-1 Biomedical Skills	(40) A (40)		(60)			B (30)		B (30)
Level 1	USSKA4-30-1 Cell Biol, Biochem & Genetics	A (40)				B (30)	B (30)		
	USSKA7-30-1 Pathophysiology of Disease	A (40)			B (45)	B (15)	•		
Compuls	USSKAR-30-2 Practice & Comms of Science	A (50)			B (25)		B (25)		
ory Modules Level 2	USSKAS-30-2 Physiological & Immunological Systems	A (50) B (50)							
	USSKAT-30-2 Studies in the Biology of Disease	A (50)		B (10)		B (20, 20)			
Compuls ory Modules Level 3	USSK5K-30-3 Research Dissertation Project OR USSKBC-30-3 Research Experimental Project				A (20)	A (10)		A (70)	
Level 3	USSKBH-30-3 Medical Genetics	A (60)				B (20, 20)			

	USSKBJ-30-3 Medical Microbiology	A (60)		B (10, 30)		
	USSKBK-30-3: Haematology	A (60)	B (20)	B (20)		
	USSKBL-30-3 Clinical Biochemistry	A (60)	B (20)	B (20)		
	USSKBM-30-3 Cellular Pathology & Oncology	A (60)	B (20)		B (20)	
	USSKBN-30-3 Immunology	A (60)	B (32)	B (8)		
Optional	USSKB3-15-2 Drugs & Disease	A (50)	B (25)	B (25)		
Modules Level 2	USSKB4-15-2 Cell Signalling	A (50)		B (50)		
	USSKB5-15-2 Medicinal Chemistry	A (50)				(50)
	USSKB6-15-2 Microbiology	A (50)		B (37.5)	B (12.5)	
	USSKB7-15-2 Molecular Genetics	A (50)		B (50)		
Optional Modules	USSK57-15-3 Professional Practice in Applied Science					A (P/F)
Level 3	USSKCE-15-3 Science Communication			A (50,50)		
	USSKBF- <b>30</b> -3 Genomic Technologies	A (60)		B (20)	B (20)	
	USSKCF-15-3 Scientific Frontiers and Enterprise			A (40)		B (60)
	USSKCA-15-3 Neuropharmacology	A (60)		B (40)		
	USSKWB-15-3 Pathophysiology	A (60)		B (40)		
	USSKBY-15-3 Antimicrobial Agents	A (60)		B (40)		
	USSKBX-15-3 Pharmacology & Toxicology	A (60)				B (40)

<sup>\*</sup>Assessment should be shown in terms of either Written Exams, Practical exams, or Coursework as indicated by the colour coding above.

# Part 6: Programme Structure

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

# **ENTRY**

	Compulsory Modules	Optional Modules	Interim Awards
	USSKA3-30-1		
	Anatomy & Physiology		
_	USSKA5-30-1		<ul> <li>Cert HE</li> </ul>
	Biomedical Skills	None	Biomedical Science
Year	USSKA4-30-1		
	Cells, Biochem &		120 credits at Level 1
	Genetics		
	USSKA7-30-1		
	Pathophysiology of		
	Disease		

	Compulsory Modules	Optional Modules *2 x 15 credit modules	Interim Awards
	USSKAR-30-2	USSKB3-15-2	
	Practice and	Drugs & Disease	
	Communication of		
	Science		
7	USSKAS-30-2	USSKB4-15-2	Dip HE Biomedical
	Physiological &	Cell Signalling	Science
Year	Immunological Systems		
	USSKAT-30-2	USSKB5-15-2	240 credits (at least 100
	Studies in the Biology of	Medicinal Chemistry	credits at level 2)
	Disease		
		USSKB6-15-2	
		Microbiology	
		USSKB7-15-2	
		Molecular Genetics	

**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  *1 project module  +  *1 specialist module	Optional Modules *60 credits from remaining specialist modules or optional modules	Interim Awards
Year 3	USSK5K-30-3 Research Dissertation Project OR	USSK57-15-3 Professional Practice in Applied Science	BSc     Biomedical     Science
	USSKBC-30-3 Research Experimental Project		Credit requirements:

USSKBH-30-3	USSKCE-15-3	300 (at least 60
Medical Genetics	Science	credits
	Communication	at level 3)
USSKBJ-30-3	USSKBF-30-3	·
Medical Microbiology	Module name:	
	Genomic	
	Technologies	
USSKBK-30-3	USSKCF-15-3	
Haematology	Scientific Frontiers	
	and Enterprise	
USSKBL-30-3	USSKCA-15-3	BSc (Hons)
Clinical Biochemistry	Neuropharmacology	Biomedical
USSKBM-30-3	USSKBW-15-3	Science
Cellular Pathology &	Pathophysiology	
Oncology		Credit
USSKBN-30-3	USSKBY-15-3	requirements:
Immunology	Antimicrobial Agents	360 (at least 200
	USSKBX-15-3	credits at level 2 or
	Pharmacology &	above; at least 100
	Toxicology	at level 3)
	3,	

#### **GRADUATION**

## Part 7: Entry Requirements

Admission into the Biomedical Sciences programme will be administered according to the University's Standard Entry Requirements. The UCAS points tariff is reviewed and published on a regular basis. (Details of the latest tariff can be found on the UWE website)

#### Part 8: Reference Points and Benchmarks

The aim of the Department of Applied Sciences is to evolve a portfolio of programmes that align with the UWE 2020 Strategy, and also the relevant QAA Benchmarks for Higher Education.

The UWE 2020 Strategy 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.

Qualification descriptors used in the QAA Framework for Higher Education Qualifications (2008)

#### Part 8: Reference Points and Benchmarks

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. Graduates of the award will have acquired the knowledge and understanding, and gained the intellectual, subject, professional, practical and transferable skills listed in previous sections.

# **QAA** subject benchmarks

Our curricula and skills map to the UK Quality Code for higher Education, specifically the QAA subject Benchmark Statement for **Biomedical Sciences (November 2015) and Biosciences (November 2015)** in order to embrace a broad range of scientific and medical knowledge, alongside the research and practicals skills that are expected of a graduate in order to become a competent IBMS-accredited scientist.

The Basic Knowledge sub-headings within the Biomedical Sciences benchmark are listed as human anatomy and physiology, cell biology, biochemistry, genetics, molecular biology, immunology and microbiology, all of which map to 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 individual subject and research and themes, so that students can develop specific knowledge and 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 the final year, with more advanced modules aligned to the research themes, alongside the core IBMS specialisms (Cellular Pathology & Oncology, Clinical Biochemistry, Immunology, Haematology, Medical Microbiology, and Medical Genetics).

The Biosciences benchmark statements also map to our programme and are "a family of methods and disciplines grouped around the investigation of life processes"; "practical and experimental subjects". Our programme includes basic organism structure and diversity, as well as social and environmental aspects of science, with a toxicology theme, and final year module on science and community / communication. Reflecting the Bioscience benchmarks for numeracy and IT, our programme includes bioinformatics and statistics. The benchmark typical standard includes students being able to: "describe and critically evaluate the evidence for the mechanisms of life processes", "interpret the significance of internal and external influences on the integration of metabolism for survival and health", and "describe and analyse patterns of inheritance and complex genetic interactions"; all these areas map to compulsory modules within the programme.

## University teaching and learning policies.

In line with the University's teaching and learning policies, 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

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Regulations and Procedures and the Workbased Learning Policy (http://www1.uwe.ac.uk/aboutus/policies).

# Research themes underpinning the programme

Academic staff involved in the Biomedical Science programme come from a diversity of backgrounds including industry, healthcare and research. Around the core IBMS biomedical subject specialisms, are research themes that reflect staff strengths. At Levels 2 and 3 the modules strongly underpinned by the research expertise of the team. The majority of staff involved are research-active and the Faculty strongly supports these research activities, particularly in association with the Centre for Research in Biosciences (CRIB). At the last REF exercise, the research was submitted to Unit of Assessment (UoA) 3 (Allied Health Professions, Dentistry, Nursing and Pharmacy), where 79% of our research was rated world-leading and internationally excellent, and to UoA 6 (Agriculture, Veterinary and Food Science), where 63% of our research was rated world-leading and internationally excellent. This highlights the world-class research being undertaken in the Department.

# Learning and teaching excellence

The quality of learning and teaching within the department is reflected in the awards of two university teacher fellows and one national teacher fellow, all of whom actively publish in education research. The Quality, Management and Enhancement (QME) of the provision is further enhanced through staff development. Staff receive annual appraisals, in-house training, and are actively encouraged to attend external courses and conferences, for which the faculty provides funds.

New academic staff undertake a one-year Academic Professional Development Programme which leads to Post-Graduate Certificate in Education, which is accredited by the Higher Education Academy (HEA). All staff are actively encouraged toward university and national teacher awards and fellowships.

### External collaborator and outreach

The Biomedical Science degree remains accredited through the IBMS, and as such this necessitates ongoing and close liaison with employers of Biomedical Scientists within the National Health Service and industry. 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 (and Healthcare Science Life Sciences) programmes. Similarly, service users are consulted on a regular basis to ensure that the programmes deliver 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 supervise sandwich (year-long) placements via electronic "Pebblepad" sharing, and onsite placement visits; and shorter term local placements or internships, facilitate the development of collaborations, and achieve a valuable professional "voice" that advises all of our programmes.

The above interactions between teaching staff and the wider professional bodies and industrial

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representatives provides vital interaction and opportunity for discussion and collaboration that serves to inform and update the Biomedical Science teaching programme in line with current trends in biomedical research and also healthcare practices.

This specification provides a concise summary of the main features of the programme and the learning outcomes that a typical student might reasonably be expected to achieve and demonstrate if he/she takes full advantage of the learning opportunities that are provided. More detailed information on the learning outcomes, content and teaching, learning and assessment methods of individual modules can be found in module specifications, available on the University's website.

### FOR OFFICE USE ONLY

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