University of the West of England BRISTOL

ACADEMIC SERVICES

PROGRAMME SPECIFICATION

Part 1: Basic Data	
Awarding Institution	University of the West of England, Bristol
Teaching Institution	University of the West of England, Bristol
Delivery Location	Frenchay and Glenside Campuses
Study abroad / Exchange / Credit recognition	N/A
Faculty responsible for programme	Health and Applied Sciences
Department responsible for programme	Biological, Biomedical and Analytical Science
Modular Scheme Title	Undergraduate Modular Scheme
Professional Statutory or Regulatory Body Links	• Institute of Biomedical Science • Health and Care Professions Council • Health Education England
Highest Award Title	BSc (Hons) Healthcare Science (Life Sciences) Pathways: • BSc (Hons) Healthcare Science (Blood Science) • BSc (Hons) Healthcare Science (Infection Science) • BSc (Hons) Healthcare Science (Genetic Science) • BSc (Hons) Healthcare Science (Tissue Science) The BSc (Hons) Healthcare Science (Transfusion and Transplantation Science) pathway specification is given in Appendix 1.
Default Award Title	
Fall-back Award Title	
Interim Award Titles	• BSc Healthcare Science • Dip HE Healthcare Science • Cert HE Healthcare Science
UWE Progression Route	N/A
Mode(s) of Delivery	FT / PT
Codes	**UCAS: C990** **JACS: C990** **ISIS2: C990** **HESA:**
Relevant QAA Subject Benchmark Statements	Bioscience and Biomedical Science 2007

CAP Approval Date	2 June 2015
Valid from	September 2016
Valid until Date	September 2022
Version	2

Part 2: Educational Aims of the Programme

The BSc (Hons) Healthcare Science (Life Sciences) programme is part of the University's extensive Biomedical Science provision to provide the principle training route for Healthcare Science Practitioners. This exciting course is delivered through a unique collaboration between the University of the West of England and NHS providers, and has been developed in direct response to the Modernising Scientific Careers programme at the Department of Health. This has been established to develop a common career pathway, education and training standards for Healthcare Scientists. The degree programme enables students to develop the knowledge and skills required of a healthcare scientist whilst also completing the extensive work-based training that forms an integral and significant proportion of a three year course, and to demonstrate specified standards of practice.

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 broad knowledge base in biosciences with specific areas of deeper understanding relevant to healthcare sciences.
- Understanding of the causes, diagnosis and treatment of disease through the combination of theoretical and laboratory-based modules studied.
- Outstanding levels of practical experience (8 – 10 modules with a laboratory component) in addition to integrated work-based learning.

More specifically it provides:
- Cutting edge healthcare sciences using state of the art equipment and learning materials.
- An understanding of the importance of patient-centered care, evidence based practice, clinical audit and multidisciplinary team working.
- Practical experience of working in NHS or private laboratories enabling the student to perform a range of relevant methods and techniques, and to undertake a project in a working context.
- An extensive use of blended approaches to support work-based-learning.
- The underpinning knowledge, skills and professional attitude to prepare students to work as a scientist, with research skills modules at all levels.
- Specialist knowledge, skills and experience within pathways specifically designed for the pursuance of a career as a Healthcare Scientist in the NHS (but not exclusively).
- Quality enhancement that incorporates stakeholders' views and feedback as critical to maintaining "Fitness for purpose and practice".

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

The BSc (Hons) Healthcare Science programme is a professionally accredited course that integrates theoretical and practical approaches to understanding the human body in health and disease. It provides a foundation in core bioscience subjects that builds to a choice of science specialisms at more advanced levels, e.g. genetics, blood sciences, cell pathology and microbiology. These subjects are supported by laboratory investigation to develop student proficiencies in data analysis, diagnosis and problem solving. Central to the programme is life

science laboratory work-based learning (predominantly within the NHS but also private) to provide professional training to greatly enhance student career prospects.

Part 3: Learning Outcomes of the Programme

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

LEVELS 1 & 2
Specialist pathway modules are highlighted in bold

Learning Outcomes:

	USSKA3-30-1 Anatomy & Physiology	USSKA4-30-1 Cell Biology, Biochemistry & Genetics	USSKA7-30-1 Pathophysiology of Disease	USSKA5-30-1 Biomedical Skills	USSKAR-30-2 Practice and Communication of Science	USSKAS-30-2 Physiological & Immunological Systems	USSKAT-30-2 Studies in the Biology of Disease	UZYSNA-15-2 Service Improvements	USSKB6-15-2 Microbiology (Infection)	USSKB7-15-2 Molecular Genetics (All expect Infection)
A) Knowledge and understanding of:										
Students will be able to:										
Demonstrate knowledge of anatomy, physiology, pharmacology, pathology, biochemistry, immunology, epidemiology, genetics, and microbiology to provide the foundations for study in any of the Life Science pathways of Healthcare Science.	x	x	x			x	x		x	x
Understand the context of healthcare sciences and their application to practical problems.								x		
Understand a broad range of diagnostic laboratory measurement techniques including the rationale for the investigation, interpretation of test results and treatment of disease.		x				x	x		x	x
Demonstrate competence in specific areas of laboratory measurement with an understanding of the principles underlying the techniques used.				x	x	x	x		x	x
Demonstrate an understanding of the research, development and innovation across the NHS and in healthcare science in particular.					x					
(B) Intellectual Skills										
Students will develop the ability to:										
Actively question and seek relevant information.				x	x					
Compare and contrast information from different sources online and offline.	x	x	x							
Critically evaluate information against hypotheses in a range of research scenarios.						x	x		x	x
Actively analyse and apply problem-solving strategies.						x	x		x	x
Demonstrate independent self-directed learning, and skills for life-long learning.								x		

Part 3: Learning Outcomes of the Programme

(C) Subject/Professional/Practical Skills										
Students will develop the ability to:										
Understand the importance of patient-centred care, evidence based practice, clinical audit and multidisciplinary team working.								x		
Apply practical approaches to the study of selective aspects of healthcare science and demonstrate an awareness of safety and good laboratory practice.	x	x	x	x		x	x		x	x
Communicate effectively scientific data and concepts using a range of communication strategies.	x	x	x	x		x	x		x	x
Develop discipline-specific interests by specialising within the programme in relation to subject and/or career aspirations.									x	x
Obtain, record, collate and critically analyse data using appropriate laboratory techniques, working as an individual or within a group .	x	x	x	x		x	x		x	x
Demonstrate an understanding of the research process, including the current ethical and legal frameworks within which human and animal research can be conducted in the UK, through the execution of a research project.						x				
(D) Transferable skills and other attributes										
Students will develop the ability to:										
Communicate information, advice, instruction and professional opinion to colleagues, patients, clients, users, their relatives and carers.								x		
Critically analyse data arising from various means of biological or work-based inquiry.				x		x	x		x	x
Undertake active learning and development.										
Apply information management skills to their learning and practice.	x	x	x	x	x	x	x	x	x	x
Work effectively as a team member.	x	x	x			x	x	x	x	x
Demonstrate an autonomous and reflective approach to lifelong learning.						x	x	x	x	x

LEVEL 3 *Specialist pathway modules are highlighted in bold* **Learning Outcomes:**	USSJSJ-30-3 Health Care Science Project	USSJSK-30-3 Professional Practice	USSKBJ-30-3 Medical Microbiology **(Infection)**	USSKBU-30-3 Infectious Disease Control **(Infection)**	USSKBM-30-3 Cellular Pathology & Oncology **(Cellular)**	USSKBR-30-3 Human Development & Pathology **(Cellular)**	USSKBH-30-3 Medical Genetics **(Genetics)**	USSKBF-30-3 Genomic Technologies **(Genetics)**	USSKBS-30-3 Blood Sciences **(Blood)**	USSKBT-30-3 Immunohaematology **(Blood)**
A) Knowledge and understanding of:										
Students will be able to:										
Understand the context of healthcare sciences and their application to practical problems.	x	x								
Understand a broad range of diagnostic laboratory measurement techniques including the			x	x	x	x	x	x	x	x

Part 3: Learning Outcomes of the Programme

Learning Outcome	1	2	3	4	5	6	7	8	9	10
rationale for the investigation, interpretation of test results and treatment of disease.										
Demonstrate competence in specific areas of laboratory measurement with an understanding of the principles underlying the techniques used.			x	x	x	x	x	x	x	x
Demonstrate an understanding of the research, development and innovation across the NHS and in healthcare science in particular.	x	x								
(B) Intellectual Skills										
Students will develop the ability to:										
Actively question and seek relevant information.	x	x	x	x	x	x	x	x	x	x
Compare and contrast information from different sources online and offline.	x		x	x	x	x	x	x	x	x
Critically evaluate information against hypotheses in a range of research scenarios.	x		x	x	x	x	x	x	x	x
Actively analyse and apply problem-solving strategies.	x		x	x	x	x	x	x	X	x
Demonstrate independent self-directed learning, and skills for life-long learning.	x	x	x	x	x	x	x	x	x	x
(C) Subject/Professional/Practical Skills										
Students will develop the ability to:										
Understand the importance of patient-centred care, evidence based practice, clinical audit and multidisciplinary team working.	x	x								
Critically observe, analyse and evaluate information arising from a wide range of sources	x	x	x	x	x	x	x	x	x	x
Apply practical approaches to the study of selective aspects of healthcare science and demonstrate an awareness of safety and good laboratory practice.	x	x			x	x				
Communicate effectively scientific data and concepts using a range of communication strategies.	x	x	x	x	x	x	x	x	x	x
Develop discipline-specific interests by specialising within the programme in relation to subject and/or career aspirations.	x	x	x	x	x	x	x	x	x	x
Obtain, record, collate and critically analyse data using appropriate laboratory techniques, working as an individual or within a group .	x				x	x				
Demonstrate an understanding of the research process, including the current ethical and legal frameworks within which human and animal research can be conducted in the UK, through the execution of a research project.	x	x								
(D) Transferable skills and other attributes										
Students will develop the ability to:										
Communicate information, advice, instruction and professional opinion to colleagues, patients, clients, users, their relatives and carers.	x	x								
Critically analyse data arising from various means of biological or work-based inquiry.	x	x	x	x	x	x	x	x	x	x
Undertake active learning and development.	x	x								
Apply information management skills to their learning and practice.	x	x	x	x	x	x	x	x	x	x
Work effectively as a team member.	x	x			x	x				
Demonstrate an autonomous and reflective approach to lifelong learning.	x	x	x	x	x	x	x	x	x	x

Part 4: Student Learning and Student Support

The work-based learning within the suite of Healthcare Science programmes in the Blood, Infection, Genetic and Tissue Science Pathways is fully integrated into the three-year programme, rather than being part of an additional "sandwich" placement year. Furthermore, the credit associated with work-based learning represents a significant proportion of the total credit for the course. The number of students recruited onto the programme is determined by

the total number of placements made available via the Workforce Development Groups, and placements will be available within Blood, Genetic, Infection and Tissue Science subjects.

There is an overarching Learning Development Agreement originally put in place by the SHA between the university and hospital trusts which supports placement arrangements. In addition the obligations and responsibilities of the student, the laboratory training officer/supervisor and the University are clearly set out in a personal Learning Agreement drawn up between all three parties. This emphasizes and encourages the student to take responsibility for the attainment of the learning outcomes. At Level 1, students observe and experience each setting, and they will be interviewed in order to be allocated their specialist pathway of choice for progression into Level 2. In Level 2, students undertake a 15 week long placement, with underpinning knowledge gained from a range of science and research skills modules. In Level 3, students undertake a 25 week placement in which they complete their professional portfolios and also an individual research project. This integrated approach, and one that allows for student choice, allows them to develop expertise in a range of scientific techniques and skills, (delivering and reporting of quality-assured tests, investigations on patients or samples).

Supporting student transition and students on placement

New students are supported in their transition to university, and additionally supported in achieving successful placements by:

- A week long induction event including orientation and introduction to the programme team.
- Timetabled introductions to module leaders.
- Being supported throughout university by a personal tutor (Academic Personal Tutor APT scheme in Levels 1 and 2; project supervisor in the APT scheme in Level 3).
- University-wide support services, all available and signposted via the virtual learning environment Blackboard "Programme Area".
- Being provided with Programme and Module Handbooks that introduce the University and Faculty, alongside all the relevant support services, regulations and procedures.
- At the start of each year, a further induction enables students to plan their study as effectively as possible. Assessment maps showing all deadlines across the academic year are produced and included in the handbooks.

All handbooks and relevant information are also passed to work-based placement supervisors. To support student transition to their healthcare placements, in L1 students rotate around the specialist disciplines to gain observe a range of laboratories and inform their specialist choices later on. Prior to their L1 summer placement, they are introduced to the portfolio, online system as part of pre-training weeklong event. Whilst students are on clinical placement, a visiting tutor makes regular visits to provide support and to liaise with supervisors. Students have access to further support via a web-based Blackboard system.

Employability and personal development

Students are supported during their time at UWE by academic tutors. Personal tutoring involves timetabled sessions leading students through the development of basic academic skills (e.g. learning how to be a successful student), and also encompassing employability.

In Level 2 a UWE 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 Profile.ac.uk, an innovative web-based interface designed to support and record placement learning progress, with the interface mapping to all the practice competencies.

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.

Library and technology enhanced learning

The library at Frenchay and Glenside campuses 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. Students have access to IT support and library facilities additionally at hospitals or private providers.

Learning and teaching 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 face-to-face activities, online learning and independent learning that enable the learning outcomes to be achieved and demonstrated.

The following activities take place:

- Scheduled learning - lectures, seminars, tutorials, project supervision, practical classes. Activities may include field trips and external visits. Scheduled sessions will vary slightly depending on the module choices made.
- 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 health science interests by attending departmental research seminars and external events.
- Work-based experiential learning.

Professional Accreditation

The Blood, Infection, Genetic & Tissue Science Pathways are currently accredited by the Institute of Biomedical Sciences (IBMS) and by Health Education England and Health and Care Professions Council. Students graduating with Honours are entitled to claim Licentiate Membership of the Institute. Those graduates who subsequently undertake a satisfactory period of specific training enabling then to complete a Registration Training Portfolio are eligible to apply to the Health and Care Professions Council (HCPC) for registration as a Biomedical Scientist.

Laboratory resources

The Faculty has a well-equipped range of scientific laboratories and specialist facilities for teaching and research in health sciences. Across the programme, between 8 – 10 modules (depending on the specialist pathway) involve laboratory practicals. The ranges of professional and real-life assessments ensure that students develop a range of key skills required of a scientist, including systematic literature searches, critical review and scientific writing competencies (in case studies, essays and reports); numeracy, statistical analysis and data handling (in laboratory write ups and data exercises), and problem solving and critical thinking at higher level modules. More independent research skills are achieved in the Healthcare Project where students will lead a project from conception, to design, to analysis and communication. Specialist training is located onsite in addition to integrated visits to local hospitals, and in student longer term placements in Levels 2 and 3.

Students with specialist needs

Part 4: Student Learning and Student Support

In addition to a personal tutor who is a student's first port of call, there is the university Student and Partnership Services. Student advisers will provide support on a wide range of issues relating to the student journey and can signpost students to the relevant services, Money, Advice and Welfare, Wellbeing, Disability Service, Dyslexia Service and the Immigration Advice for further advice and support. The Programme Team will work collaboratively with support services to support students from pre-entry stage to graduation.

Description of any Distinctive Features

One of the distinctive features of Healthcare Science is the outstanding collaborative relationships between the NHS service providers and UWE. NHS staff attend regular meetings, input and partly deliver aspects of the curriculum.

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 (Profile) that manages the acquisition of all professional competencies. Profile is accessed by the student, and progress is overseen by the Work Base Supervisor. The UWE tutors and programme leaders monitor overall progression though the course.

Part 5: Assessment

A: Approved to University Regulations and Procedures

In order to be eligible to apply for HCPC Registration a student must graduate with a BSc (Hons) Healthcare Science (Life Sciences) award. The programme will have at least one external examiner appointed who is appropriately experienced and qualified and is from the relevant part of the HCPC register.

No modules can be considered for condonation.

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 suite of Healthcare Science programmes will be professionally accredited and practice-oriented, and map to the strategic ambition of the university. A range and types of assessments underpin the personal and professional skills recognised by the healthcare sector.

The assessment strategy maps with the UWE regulations, and the assessment outcomes ensure students 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.

Part 5: Assessment

The subject requirements as framed by the Institute of Biomedical Science, Health and Care Professions Council and QAA Subject Benchmarks (Biomedical Science and Bioscience) build from Levels 1 to 3, from a basic foundation in bioscience knowledge and analytical skills, through to more specialist choices at an advanced level.

The alignment of assessment strategy with learning outcomes is as follows:

Subject knowledge and understanding:

Students will demonstrate their subject knowledge and understanding gained through practical and skills evaluations, written and oral communication, and subject examinations. Additional evidence will be supplied through the work based training portfolios. Assessment methods are specified in each module guide and are varied and designed to test the learning outcomes.

Intellectual skills and ability:

Through a range of formative and summative assessment opportunities, the student develops intellectual skills demonstrating through student-centered learning and reflection, written assignments, practical work, data handling and interpretation, tutorial and seminar work. Levels 1 to 3 see incremental increases in the level of independence and critical thinking assessed, from demonstrating basic skills at Level 1 to applying them in Level 3; from basic understanding of knowledge in Level 1 to critical appraisal and problem solving in Level 3.

Subject, Professional and Practical Skills

Subject knowledge acquired through face-to-face teaching and independent learning are primarily assessed through examination, coursework and practical assessments. (These address skills 2 to 6 – critical observation, communication, data analysis). Skill 1 that is acquired within professionally related modules (e.g. Service Enhancement (Level 2), Project (Level 3) and Professional Practice (Level 3) is assessed though case studies, reflective practice and the competency portfolio (training manual). The independent project (Level 3) is pivotal to acquiring all skills, in particular skill 7 with an understanding of research governance and processes, and this is assessed through a research dissertation, progress report and oral poster defense.

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 and during work placements in accredited NHS laboratories. These skills are evaluated through university-based coursework – essays, practical sessions, and also work-based training portfolios. Skill 1 – the ability to communicate with professionals, patients and clients is an IBMS competency, so maps to the training portfolio.

Assessment Map

The programme encompasses a range of **assessment methods** including writing (essays); problem solving (case studies and research); numeracy (data analysis and practical write ups) and science communications (oral presentations and poster presentations). These are detailed in the following assessment map:

All modules are COMPULSORY although students will choose according to their specialist pathway.

Part 5: Assessment

Assessment Map for Healthcare Science (Life Sciences)
Blood Science, Genetic Science, Infection Science, Tissue Science

Specialist pathway modules are highlighted in bold		Type of Assessment*							
		Unseen Written Exam	In-class Written Test	Practical Skills Assessment	Oral assessment and/or presentation	Written Assignment (essay/case study)	Written Assignment (data analysis/ reporting)	Project Report	Portfolio
Compulsory Modules Level 1	USSKA3-30-1 Anatomy & Physiology	A (40)	B (30)				B (30)		
	USSKA5-30-1 Biomedical Skills	A (40)					B (30)		B (30)
	USSKA4-30-1 Cell Biology, Biochem. & Genetics	A (40)				B (30)	B (30)		
	USSKA7-30-1 Pathophysiology of Disease	A (40)			B (45)	B (15)			
Compulsory Modules Level 2	USSKAR-30-2 Practice & Comm. of Science	A (50)			B (25)		B (25)		
	USSKAS-30-2 Phys. & Immunological Systems	A (50) B (50)							
	USSKAT-30-2 Studies in the Biology of Disease	A (50)				B (25)	B (25)		
	UZYSNA-15-2 Service Improvement								A (100)
Optional Modules Level 2	USSKB6-15-2 Microbiology **(Infection)**	A (50)				B (40)	B (10)		
	USSKB7-15-2 Molecular Gen. **(All others)**	A (50)				B (50)			
Compulsory Modules Level 3	USSJSJ-30-3 Healthcare Science Project				A (20)	A (20)		A (60)	
	USSJSK-30-3 Prof. Prac. for Healthcare Sci.			A (P/F)		B (100)			A (P/F)
Optional Modules Level 3	USSKBJ-30-3 Medical Microbiology **(Infection)**	A (60)				B (40)			
	USSKBU-30-3 Infect. Dis. Control **(Infection)**	A (60)				B (20)	B (20)		
	USSKBM-30-3 Cell. Pathol. & Onco.**(Cellular)**	A (60)			B (20)		B (20)		
	USSKBR-30-3 Human Dev.& Path. **(Cellular)**	A (60)				B (20)	B (20)		
	USSKBH-30-3 Medical Genetics **(Genetics)**	A (60)				B (40)			
	USSKBF-30-3 Genomic Technol.**(Genetics)**	A (60)				B (20)	B (20)		
	USSKBS-30-3 Blood Sciences **(Blood)**	A (60)			B (20)	B (20)			
	USSKBT-30-3 Immunohaematology **(Blood)**	A (60)			B (10)	B (30)			

Part 5: Assessment

*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
Year 1	• USSKA3-30-1 Anatomy & Physiology • USSKA5-30-1 Biomedical Skills • USSKA4-30-1 Cell Bio., Biochem. & Genetics • USSKA7-30-1 Pathophysiology of Disease	None	Cert HE Healthcare Science Credit requirements: 120

	Compulsory Modules	Optional Modules	Interim Awards
Year 2	• USSKAR-30-2 Practice & Comm. of Science • USSKAS-30-2 Phys. & Immunological Systems • USSKAT-30-2 Studies in the Bio. of Disease • UZYSNA-15-2 Service Improvement	Students must opt for one of the following four pathways: **Blood Science** • USSKB7-15-2 Molecular Genetics **Infection Science** • USSKB6-15-2 Microbiology **Genetic Science** • USSKB7-15-2 Molecular Genetics **Tissue Science** • USSKB7-15-2 Molecular Genetics	Dip HE Healthcare Science Credit requirements: 240

	Compulsory Modules	Optional Modules	Interim Awards
Year 3			

	• USSJSJ-30-3 Healthcare Science Project • USSJSK-30-3 Professional Practice for Healthcare Science	Students must opt for one of the following four pathways: **Blood Science** • USSKBS-30-3 Blood Sciences • USSKBT-30-3 Immunohaematology **Infection Science** • USSKBJ-30-3 Medical Microbiology • USSKBU-30-3 Infectious Disease Control **Genetic Science** • USSKBH-30-3 Medical Genetics • USSKBF-30-3 Genomic Technology **Tissue Science** • USSKBM-30-3 Cellular Pathology & Oncology • USSKBR-30-3 Human Development & Pathology	

GRADUATION

Part 7: Entry Requirements

Admission into the Healthcare Science Programme will be administered by the Faculty Admissions Team. Students are selected in an appropriate interview process run by academic staff. Successful application to the Programme must meet one of the following minimum requirements:

Tariff points: 320 as of 2015 Tariff points as appropriate for the year of entry (refer to the UWE website http://courses.uwe.ac.uk/C990/#entry)

GCSE: Grade C or above in English Language, Mathematics and Double Science

A-level subjects: Grade C or above in Biology or Chemistry plus a pass in another science subject. Points from A-Level General Studies and AS-Level subjects (not taken onto full A-Level) can be included towards overall tariff. You must have a minimum of two A-Levels.

Specific subjects: Biology, Chemistry EDEXCEL (BTEC) Diploma: A minimum of DDM from the BTEC Diploma, to include 6 units in Biology or Chemistry and 6 units in another science subject

Access: Achievement of the Access to HE Diploma; to include 15 level 3 credits at merit in Biology or Chemistry, and an additional 15 credits at merit in another science subject;

Part 7: Entry Requirements

achievement of level 2 credits giving GCSE equivalence (where appropriate) in English Language, Mathematics and Science.

Baccalaureate IB: 27 points, with a minimum grade of 5 in higher level Biology or Chemistry plus a pass in another higher level science subject.

Occupational Health and Disclosure and Barring Service checks will be undertaken on all candidates in accordance with university, faculty and programme policies.

Admission to the course will be subject to interview for which the panel will comprise an academic and a professional from clinical practice.

Part 8: Reference Points and Benchmarks

The aim of the Department of BBAS is to evolve a portfolio of programmes that align with the UWE 2020 Strategy that includes:

"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".

Healthcare Science connects with external partners including business, the National Health Service and communities, and 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)

Health and Care Professions Council Standards

The BSc (Hons) Healthcare Science (Life Sciences) programme is consistent with the Health and Care Professions Council standards:
- Health and Care Professions Council (2014) Standards of Education and Training
- Health Professions Council (2014) Standards of Proficiency for Biomedical Scientists
- Health and Care Professions Council (2012) Standards of Conduct, Performance, and Ethics

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

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 QAA subject benchmark statements for Biomedical Science and Bioscience 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 IBMS-accredited scientist.

Part 8: Reference Points and Benchmarks

The Basic Knowledge sub-headings within the Biomedicine 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 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", they 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, Blood Sciences, Immunohaematology, Medical Genetics, Medical Microbiology and Transfusion & Transplantation Science).

The Bioscience 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", "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 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 programme are from a diversity of backgrounds including industry, healthcare and research, and their interests inform module delivery. 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), which was submitted to REF2014 in UoA3 – Allied Health Professions and Nursing.

Learning and teaching excellence

The quality of learning and teaching within the department is reflected in the awards of two university teacher fellows and two national teacher fellows, and staff who actively publish educational research. The Quality, Management and Enhancement (QME) of the provision is

Part 8: Reference Points and Benchmarks

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 interaction and outreach

The integrated nature of the programme necessitates ongoing and close liaison with employers of Healthcare Scientists within the national health service. 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 Healthcare Science 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 the Clinical Pathology Accreditation/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 and shorter term local hospital placements facilitate the development of collaborations, and achieve valuable professional "voice" that advises all of our programmes.

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.

Appendix 1

SPECIFICATION FOR ADDITIONAL AWARD TITLE

Title of Primary Award	BSc (Hons) Healthcare Science (Life Sciences)
Highest Award Title of additional target	BSc (Hons) Healthcare Science (Life Sciences) Pathway: BSc (Hons) Healthcare Science (Transfusion and Transplantation Science)
Interim Award Titles for additional target	- BSc Healthcare Science - Dip HE Healthcare Science - Cert HE Healthcare Science
Mode(s) of Delivery	FT / PT / BL / DL
Codes	**UCAS: C990** **JACS: C990** **ISIS2: C990** **HESA:**
Relevant QAA Subject Benchmark Statements	Bioscience and Biomedical Science 2007
CAP Approval Date	
Valid until Date	
Version	

Part 2a: Educational Aims of the Programme [Common to All Pathways]

The BSc (Hons) Healthcare Science (Life Sciences) programme is part of the University's extensive Biomedical Science provision to provide the principle training route for Healthcare Science Practitioners. This exciting course is delivered through a unique collaboration between the University of the West of England and NHS providers, and has been developed in direct response to the Modernising Scientific Careers programme at the Department of Health. This has been established to develop a common career pathway, education and training standards for Healthcare Scientists. The degree programme enables students to develop the knowledge and skills required of a healthcare scientist whilst also completing the extensive work-based training that forms an integral and significant proportion of a three year course, and to demonstrate specified standards of practice.

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 broad knowledge base in biosciences with specific areas of deeper understanding relevant to healthcare sciences.
- Understanding of the causes, diagnosis and treatment of disease through the combination of theoretical and laboratory-based modules studied.
- Outstanding levels of practical experience (8 – 10 modules with a laboratory component) in addition to integrated work-based learning.

More specifically it provides:
- Cutting edge healthcare sciences using state of the art equipment and learning materials

Part 2a: Educational Aims of the Programme [Common to All Pathways]

- An understanding of the importance of patient-centered care, evidence based practice, clinical audit and multidisciplinary team working.
- Practical experience of working in NHS or private laboratories enabling the student to perform a range of relevant methods and techniques, and to undertake a project in a working context.
- An extensive use of blended approaches to support work-based-learning.
- The underpinning knowledge, skills and professional attitude to prepare students to work as a scientist, with research skills modules at all levels.
- Specialist knowledge, skills and experience within pathways specifically designed for the pursuance of a career as a Healthcare Scientist in the NHS (but not exclusively).
- Quality enhancement that incorporates stakeholders' views and feedback as critical to maintaining "Fitness for purpose and practice".

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

The BSc (Hons) Healthcare Science programme is a professionally accredited course that integrates theoretical and practical approaches to understanding the human body in health and disease. It provides a foundation in core bioscience subjects that builds to a choice of science specialisms at more advanced levels, e.g. genetics, blood sciences, cell pathology and microbiology. These subjects are supported by laboratory investigation to develop student proficiencies in data analysis, diagnosis and problem solving. Central to the programme is life science laboratory work-based learning (predominantly within the NHS but also private) to provide professional training to greatly enhance student career prospects.

Part 3a: Learning Outcomes of the Programme [Transfusion & Transplantation Science Pathway Specific]

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:	USSJT5-30-1 Scientific Basis of Life	USSJT6-30-1 Principles in Healthcare Sci.	USSJT7-30-1 Pathophysiology of Disease	USSJT8-30-1 Anatomy & Physiology	USSJT9-30-2 Scientific Measurement	USSJTA-60-2 Healthcare Sci. in Practice	USSJTC-30-2 Prof. Aspects of Health. Sci.	USSKL5-30-3 Applied T. and T. Science	USSKL4-30-3 Advanced T. and T. Science	USSJSJ-30-3 Healthcare Science Project	USSJSK-30-3 Prof. Prac. for Health. Sci.
A) Knowledge and understanding of:											
Students will be able to:											
Demonstrate knowledge of anatomy, physiology, pharmacology, pathology, biochemistry, immunology, epidemiology, genetics, and microbiology to provide the foundations for study in any of the Life Science pathways of Healthcare Science.	x		x	x		x					
Understand the context of healthcare sciences and their application to practical problems.							x			x	x
Understand a broad range of diagnostic laboratory measurement techniques including the rationale for the investigation, interpretation of test results and treatment of disease.		x				x	x	x	x		
Demonstrate competence in specific areas of laboratory measurement with an understanding of the principles underlying the techniques used.		x				x		x	x		
Demonstrate an understanding of the research, development and innovation across the NHS and in healthcare science in particular.					x					x	x
(B) Intellectual Skills											
Students will develop the ability to:											
Actively question and seek relevant information.		x			x			x	x	x	x
Compare and contrast information from different sources online and offline.	x		x	x				x	x	x	
Critically evaluate information against hypotheses in a range of research scenarios.						x		x	x	x	
Actively analyse and apply problem-solving strategies.						x		x	x	x	
Demonstrate independent self-directed learning, and skills for life-long learning.							x	x	x	x	x
(C) Subject/Professional/Practical Skills											
Students will develop the ability to:											
Understand the importance of patient-centred care, evidence based practice, clinical audit and multidisciplinary team working.							x			x	x
Critically observe, analyse and evaluate information arising from a wide range of sources.								x	x	x	x
Apply practical approaches to the study of selective aspects of healthcare science and demonstrate an awareness of safety and good laboratory practice.	x	x	x	x		x	x	x	x	x	x
Communicate effectively scientific data and concepts using a range of communication strategies.	x	x	x	x	x	x	x	x	x	x	x

	1	2	3	4	5	6	7	8	9	10	11
Develop discipline-specific interests by specialising within the programme in relation to subject and/or career aspirations.						x	x	x	x	x	x
Obtain, record, collate and critically analyse data using appropriate laboratory techniques, working as an individual or within a group .	x		x	x	x	x		x	x	x	
Demonstrate an understanding of the research process, including the current ethical and legal frameworks within which human and animal research can be conducted in the UK, through the execution of a research project.						x				x	x
(D) Transferable skills and other attributes											
Students will develop the ability to:											
Communicate information, advice, instruction and professional opinion to colleagues, patients, clients, users, their relatives and carers.							x			x	x
Critically analyse data arising from various means of biological or work-based inquiry.						x		x	x	x	x
Undertake active learning and development.										x	x
Apply information management skills to their learning and practice.	x	x	x	x	x	x	x	x	x	x	x
Work effectively as a team member.	x	x	x	x		x	x	x	x	x	x
Demonstrate an autonomous and reflective approach to lifelong learning.						x	x	x	x	x	x

Part 4a: Student Learning and Student Support [Transfusion & Transplantation Science Pathway Specific]

The Transfusion and Transplantation Science Pathway is unique in that work-based learning is fully integrated into the programme for in-post Healthcare Science Associates. Furthermore, the credit associated with work-based learning represents a significant proportion of the total credit for the course.

The Transfusion and Transplantation Science Pathway seeks to provide an outstanding learning experience for all students, and create an environment that will stimulate students to take responsibility for aspects of their learning, while tutors take responsibility for facilitating that learning. Thus, the course has been designed (in direct alignment with the University's teaching and learning policies) to take 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 with the learning process and reflection on their knowledge, experience and practice.

To encapsulate this ethos, the Transfusion and Transplantation Science Pathway has been designed to comprise of:

- Short block release periods (which require attendance at UWE), primarily for induction, laboratory work and assessments. They will also form the crucial function in creating a course and student cohort identity. Given the likelihood of a range of IT competency among the student body, part of the initial attendance block at UWE undertaken by these students will include introductory sessions to the technology-based resources used on this programme.
- Several distinct online TEL units within each module comprising of Learning Packages and Activities.

There is a detailed discussion of the TEL aspects of this pathway (with further details on the Learning Packages and Activities components) in Appendix 2 – The Transfusion and Transplantation Science Pathway TEL strategy.

During the programme the following activities take place:

Part 4a: Student Learning and Student Support [Transfusion & Transplantation Science Pathway Specific]

- Scheduled learning includes up to 13 days per year at the university in seminars, tutorials, demonstrations and practical classes; and synchronous online, collaborative group work which may be timetabled on a weekly basis and participation in asynchronous online activities. The latter are more akin to a discussion board where input is less regular and therefore more likely to be done at home where a specific task is not timetabled, but is moderated by an academic.
- Independent learning includes hours engaged with essential reading, case study preparation, assignment preparation and completion and engagement with learning material on Blackboard.
- Work-based learning: Work based skills will be gained during on the job training which will be based on the appropriate professional competencies within the Practitioner Training Programme. The work-based training will be augmented with blended learning to ensure the student understands the breadth of the application of science within their Healthcare Science Division and can apply that knowledge in practice. Students will maintain a portfolio of evidence gaining the learning outcomes from the healthcare science training manuals relevant to their employment.

Description of the teaching resources provided for students

Learning activities in the student's workplace will be guided and assessed through an online competency portfolio that not only reflects core competencies required for the role, but also provides the flexibility for the identification of role specific competencies depending on where the student is working. These role specific competencies will be identified by the employer to ensure the programme is truly employer responsive and will be captured within the learning agreement.

Student support is available through personal tutors, module leaders, the programme leader, student advisors, peer support, the Student Wellbeing Service, the Students' Union and UWE wide student facing facilities. A wide range of communication methods are utilized i.e. face to face, email, text, Skype and telephone.

The extensive library services support students throughout their UWE programmes. Services are very accessible to students with long opening hours on campus. Online 24 hour library support is available in the form of a chat service. In addition a name subject support librarian is available for students to gain 1:1 support with detailed work e.g. search strategies. In addition the library offers extensive access to online journals, databases, ebooks, and seminars (e.g. REFworks, Advanced literature searching).

More details on the TEL teaching resources provided for students may be found in in Appendix 2 – The Transfusion and Transplantation Science Pathway TEL strategy.

Professional Accreditation

Pathway specific accreditation by the Institute of Biomedical Sciences (IBMS), Health Education England and the Health and Care Professions Council will be applied for. Students graduating with Honours are entitled to claim Licentiate Membership of the Institute if accreditation is secured. Those graduates who subsequently undertake a satisfactory period of specific training enabling then to complete a Registration Training Portfolio are eligible to apply to the Health and Care Professions Council (HCPC) for registration as a Biomedical Scientist.

Laboratory resources

The Faculty has a well-equipped range of scientific laboratories and specialist facilities for teaching and research in health sciences. Across the programme, between 8 – 10 modules

Part 4a: Student Learning and Student Support [Transfusion & Transplantation Science Pathway Specific]

(depending on the specialist pathway) involve laboratory practicals. The ranges of professional and real-life assessments ensure that students develop a range of key skills required of a scientist, including systematic literature searches, critical review and scientific writing competencies (in case studies, essays and reports); numeracy, statistical analysis and data handling (in laboratory write ups and data exercises), and problem solving and critical thinking at higher level modules. More independent research skills are achieved in the Healthcare Project where students will lead a project from conception, to design, to analysis and communication.

Students with specialist needs

In addition to a personal tutor who is a student's first port of call, there is the university Student and Partnership Services. Student advisers will provide support on a wide range of issues relating to the student journey and can signpost students to the relevant services, Money, Advice and Welfare, Wellbeing, Disability Service, Dyslexia Service and the Immigration Advice for further advice and support. The Programme Team will work collaboratively with support services to support students from pre-entry stage to graduation.

Description of any Distinctive Features

Students on the Transfusion and Transplantation Pathway will undergo a blended educational/vocational experience of work based learning and online knowledge exchange/academic content delivery. This blend could be thought of as a learning package, where the knowledge transfer combined with the skills learned in the workplace enable the student to apply their academic knowledge to a practice based environment.

The programme aims to support learners in their achievement of "the qualities needed for employment in situations requiring the exercise of personal responsibility and decision-making in complex and unpredictable circumstances" (QAA 2008). It further aims to support the practitioners in achieving "sound judgment, personal responsibility and initiative, in complex and unpredictable professional environments" (QAA 2008). To ensure the successful integration of theory and practice, the programme will be delivered in collaboration with stakeholders, service users and carers, researchers and members of the programme team.

The Transfusion and Transplantation Science Pathway will be driven by the workforce development needs of the employers whilst reflecting the quality of student learning within an academic framework. To this end there will be a learning contract laid down with the student, employer (work based mentor) and UWE staff. Thus ensuring the students' development needs are met by all parties involved.

Part 5a: Assessment

[Common to all Pathways]

A: Approved to University Regulations and Procedures

In order to be eligible to apply for HCPC Registration a student must graduate with a BSc (Hons) Healthcare Science (Life Sciences) award. The programme will have at least one external examiner appointed who is appropriately experienced and qualified and is from the relevant part of the HCPC register.

No modules can be considered for condonation.

Assessment Strategy [Common to all Pathways]

Part 5a: Assessment

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 suite of Healthcare Science programmes will be professionally accredited and practice-oriented, and map to the university's strategic ambition. A range and types of assessments underpin the personal and professional skills recognised by the healthcare sector.

The assessment strategy maps with the UWE regulations, and the assessment outcomes ensure students 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.

The subject requirements as framed by the Institute of Biomedical Science, Health and Care Professions Council and QAA Subject Benchmarks (Biomedical Science and Bioscience) build from Levels 1 to 3, from a basic foundation in bioscience knowledge and analytical skills, through to more specialist choices at an advanced level.

The alignment of assessment strategy with learning outcomes is as follows:

Subject knowledge and understanding:

Students will demonstrate their subject knowledge and understanding gained through practical and skills evaluations, written and oral communication, and subject examinations. Additional evidence will be supplied through the work based training portfolios. Assessment methods are specified in each module guide and are varied and designed to test the learning outcomes.

Intellectual skills and ability:

Through a range of formative and summative assessment opportunities, the student develops intellectual skills demonstrating through student-centered learning and reflection, written assignments, practical work, data handling and interpretation, tutorial and seminar work. Levels 1 to 3 see incremental increases in the level of independence and critical thinking assessed, from demonstrating basic skills at Level 1 to applying them in Level 3; from basic understanding of knowledge in Level 1 to critical appraisal and problem solving in Level 3.

Subject, Professional and Practical Skills

Subject knowledge acquired through online teaching, face-to-face teaching and independent learning are primarily assessed through examination, coursework and practical assessments. (These address skills 2 to 6 – critical observation, communication, data analysis). Skill 1 that is acquired within professionally related modules (e.g. Professional Aspects (Level 2), Project (Level 3) and Professional Practice (Level 3) is assessed though case studies, reflective practice and the competency portfolio (training manual). The independent project (Level 3) is pivotal to acquiring all skills, in particular skill 7 with an understanding of research governance and processes, and this is assessed through a research dissertation, progress report and oral poster defense.

[Transfusion & Transplantation Science Pathway Specific]: Practice checkpoints are also built into every Level of the degree to ensure sufficient Practitioner Training Programme portfolio progression. This is contained within the assessments for the modules:
- USSJT6-30-1 Principles in Healthcare Science
- USSJTC-30-2 Professional Aspects of Healthcare Science

Part 5a: Assessment

- USSJSK-30-3 Professional Practice for Healthcare Science

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 and during work-based learning. These skills are evaluated through university-based coursework – essays, practical sessions, and also work-based training portfolios. Skill 1 – the ability to communicate with professionals, patients and clients is an IBMS competency, so maps to the training portfolio.

Assessment Map [Transfusion & Transplantation Science Pathway Specific]

The programme encompasses a range of **assessment methods** including online MCQs, essays, posters, presentations, embedded online activities, written examinations. These are detailed in the following assessment map:

All modules are COMPULSORY although students will choose according to their specialist pathway.

**Assessment Map for Healthcare Science (Life Sciences)
Transfusion & Transplantation Science**

Specialist pathway modules are highlighted in bold		Type of Assessment*							
		Unseen Written Exam	Embedded Online activities	Practical Skills Assessment	Oral assessment and/or presentation	Written Assignment (essay / case study)	Written Assignment (data analysis / reporting)	Project Report	Portfolio
Compulsory Modules Level 1	USSJT5-30-1 Scientific Basis of Life	A (40)			B (30)		B (30)		
	USSJT6-30-1 Principles in Healthcare Science	A (100)		B (P/F)					
	USSJT7-30-1 Pathophysiology of Disease	A (40)			B (30)		B (30)		
	USSJT8-30-1 Anatomy & Physiology	A (40)				B (30)	B (30)		
Compulsory Modules Level 2	USSJT9-30-2 Scientific Measurement		A (50)			B (25)		B (25)	
	USSJTA-60-2 Healthcare Science in Practice	A (25)	A (25)		B (40)			B (10)	
	USSJTC-30-2 Prof. Aspects of Healthcare Sci.			A (P/F)					B (100)
Compulsory Modules Level 3	USSKL5-30-3 Applied T. and T. Science	A (30)	A (30)		B (40)				
	USSKL4-30-3 Advanced T. and T. Science	A (30)	A (30)			B (40)			
	USSJSJ-30-3 Healthcare Science Project				A (20)	A (20)		A (60)	
	USSJSK-30-3 Prof. Prac. for Healthcare Sci.			A (P/F)		B (100)			A (P/F)

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

Part 6a: Programme Structure [Transfusion & Transplantation Science Pathway Specific]

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
Year 1	• USSJT5-30-1 Scientific Basis of Life • USSJT6-30-1 Principles in Healthcare Science • USSJT7-30-1 Pathophysiology of Disease • USSJT8-30-1 Anatomy & Physiology	None	Cert HE Healthcare Science Credit requirements: 120

	Compulsory Modules	Optional Modules	Interim Awards
Year 2	• USSJT9-30-2 Scientific Measurement • USSJTA-60-2 Healthcare Science in Practice • USSJTC-30-2 Professional Aspects of Healthcare Science	None	Dip HE Healthcare Science Credit requirements: 240

	Compulsory Modules	Optional Modules	Interim Awards
Year 3	• USSKL5-30-3 Applied Transfusion and Transplantation Science • USSKL4-30-3 Advanced Transfusion and Transplantation Science • USSJSJ-30-3 Healthcare Science Project • USSJSK-30-3 Professional Practice for Healthcare Science	None	

Graduation

Part 7a: Entry Requirements [Common to All Pathways]

Admission into the Healthcare Science Programme will be administered by the Faculty Admissions Team. Students are selected in an appropriate interview process run by academic staff. Successful application to the Programme must meet one of the following minimum requirements:

Tariff points: 320 as of 2015 Tariff points as appropriate for the year of entry (refer to the UWE website http://courses.uwe.ac.uk/C990/#entry)

GCSE: Grade C or above in English Language, Mathematics and Double Science

A-level subjects: Grade C or above in Biology or Chemistry plus a pass in another science subject. Points from A-Level General Studies and AS-Level subjects (not taken onto full A-Level) can be included towards overall tariff. You must have a minimum of two A-Levels.

Specific subjects: Biology, Chemistry EDEXCEL (BTEC) Diploma: A minimum of DDM from the BTEC Diploma, to include 6 units in Biology or Chemistry and 6 units in another science subject

Access: Achievement of the Access to HE Diploma; to include 15 level 3 credits at merit in Biology or Chemistry, and an additional 15 credits at merit in another science subject; achievement of level 2 credits giving GCSE equivalence (where appropriate) in English Language, Mathematics and Science.

Baccalaureate IB: 27 points, with a minimum grade of 5 in higher level Biology or Chemistry plus a pass in another higher level science subject.

[Transfusion & Transplantation Science Pathway Specific]: Candidates must be in employment in a relevant role in a pathology laboratory, clinical physiology department or community health centre.

Part 8a: Reference Points and Benchmarks [Common to All Pathways]

The aim of the Department of BBAS is to evolve a portfolio of programmes that align with the UWE 2020 Strategy that includes:

"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".

Healthcare Science connects with external partners including business, the National Health Service and communities, and 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)

Health and Care Professions Council Standards

Part 8a: Reference Points and Benchmarks [Common to All Pathways]

The BSc (Hons) Healthcare Science (Life Sciences) programme is consistent with the Health and Care Professions Council standards:
- Health and Care Professions Council (2014) Standards of Education and Training
- Health Professions Council (2014) Standards of Proficiency for Biomedical Scientists
- Health and Care Professions Council (2012) Standards of Conduct, Performance, and Ethics

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

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 QAA subject benchmark statements for Biomedical Science and Bioscience 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 IBMS-accredited scientist.

The Basic Knowledge sub-headings within the Biomedicine 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 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", they 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, Blood Sciences, Immunohaematology, Medical Genetics, Medical Microbiology and Transfusion & Transplantation Science).

The Bioscience 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", "describe and analyse patterns of inheritance and complex genetic interactions"; all these areas map to compulsory modules within the programme.

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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 Workbased Learning Policy (http://www1.uwe.ac.uk/aboutus/policies).

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- Practitioners are actively involved in the design, delivery and continued development of the Healthcare Science 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 the Clinical Pathology Accreditation/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.

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.

Transfusion and Transplantation Science (T&T) Pathway

Technology Enhanced Learning (TEL) Strategy

Strategy aims
- To provide an evidence base for the TEL strategy
- To provide a portfolio of expected or available TEL tools and approaches that engage the student at both the individual and group level, and complement their learning online and in class, where appropriate
- To outline the expectation of student effort and engagement with online knowledge exchange and learning facilitation, given the off-site based nature of the T&T Pathway model of delivery
- To be informed by the criteria, requirements, and minimum engagement of both the UWE e-learning policy and the HAS faculty TEL policy, as well as the QAA standard

1. Introduction

The nature of the T&T Pathway model of delivery necessitates prolonged periods of learning and application of knowledge away from the classroom setting, and face to face access to both academic staff and the student body registered on the programme. Therefore it becomes key to successful academic and experiential learning, that sufficient online resources be made available throughout the course, and that those resources target both effective dissemination of academic content as well as collegiate engagement.

The Higher Education Academy "Work-based learning: Illuminating the higher education landscape report - Final report" highlights an important issue in delivery of learning by non-traditional methods; that of costing and resourcing, and the impact that has on the provision of such modes. A study in 2003 on behalf of HEFCE looked at e-learning, distance learning, workplace learning and accreditation of prior experiential learning. All these different forms of learning were identified as being more resource intensive than conventional approaches. Due to such labour intensive methods of learning being largely reliant on the enthusiastic individual to deliver, their implementation is often lacking. The T&T Pathway model of delivery is, in essence, a combination of all these learning methods, and as such is at risk of falling prey to this trend unless a framework of academic and technical staff is created and supported effectively by the necessary resources and technologies as well as by higher management.

To address this, this strategy intends to provide a structure for supporting e-learning development throughout the programme that adheres to the academic content programme specifications, and framework of the work based learning environment, while providing adequate support and guidance for staff involved. Innovative design and development of TEL is encouraged, particularly in the case of online tutorials that complement the work based learning undertaken in the laboratories, and also in designing group activities to encourage teamwork and interaction with fellow students.

This strategy makes particular reference to the "Code of practice for the assurance of academic quality and standards in higher education: Collaborative provision and flexible and distributed learning (including e-learning) – Amplified version October 2010". Where appropriate, the strategy also aims to make use of "BS8426: A code of practice for e-support in e-learning systems (BSI, 2003)."

The QAA document mentioned above suggests the following when utilising an e-learning environment:

"Particularly in an e-learning environment, students may need time to understand and become familiar with technologies that are new to them. They may need some introductory support, possibly involving access to on-line learning environments prior to the start of the course so that equipment and technical access can be tested and new skills practised. Consideration might be given to the need to assign an identified contact prior to the commencement of study to enable the programme presenter to ensure that the student's induction and preparation have been adequate."

As part of the initial attendance block of these students on campus it will be necessary, given the likelihood of a range of IT competency among the student body, that an introductory session to the resources used on this programme be timetabled, and an academic be identified to act as this liaison for TEL.

The 2010 QAA also highlights the need for student responsibility in responding to online requests and participating in online activities. These expectations and guidelines should be laid out early on in the programme, again possibly during the initial campus visit. It is suggested that online participation be monitored and perhaps form part of the assessment strategy, if deemed appropriate by the individual module leaders.

1.1 TEL material production

Much of the e-learning/TEL strategy will be directed and informed by the individual needs of the modules that comprise this programme. The learning outcomes and work based competencies must map closely with one another, and with any online resources designed to complement that knowledge exchange and its application. In some cases it will be appropriate to use TEL in order to develop formative assessments that aid both the academic and the student in determining the student's ability to understand and use the material delivered. In others the primary use of TEL will come from the online delivery of lectures. It is expected that the minimum use of TEL within this programme (in addition to use of Blackboard that meets the HAS faculty TEL strategy requirements) would entail hosting of lectures online in one or more of the following formats, possibly in combination in some cases:

- Powerpoint presentation as downloadable file
- Powerpoint with audio enhancements where necessary
- Powerpoint with interactive enhancements
- Screencast of powerpoint with audio
- Mediasite live recording of lecture with audio and video in addition to screencast

In addition, academics responsible for delivery of online material are encouraged to develop online quizzes, tutorials, case studies and other suitable resources that complement the learning provided by other means. There are a number of faculty supported packages, software, and tools that can aid in creating these complementary resources, and this programme provides the opportunity for that collection of tools to grow over time depending on necessity and requirements of the course. It is expected that staff will be actively supported in engaging with e-learning materials and tools, and training will be provided wherever possible for those who wish to develop their skills.

1.2 TEL material delivery

The issue facing online learning is primarily that of delivering material in such a way as to duplicate the feeling of engagement that traditional "in class" teaching achieves by way of verbal explanation and interaction with the audience. The TEL strategy for this programme

therefore suggests a delivery mechanism that limits downloading (as this introduces numerous copyright issues that off campus learning cannot exercise control), but that encourages the student to interact with the material as well as read through and/or watch recorded video and audio feeds. Lectures will likely be delivered in the same pattern as standard programmes at UWE, but this pattern and indeed the modality of the material will be determined largely by the module for which it is being delivered.

The rotational/varied specialism nature of the work based element of the T&T Pathway model of delivery also creates a rather unique opportunity for collaborative study. Though part of the same subject group, it is not commonplace for staff in different laboratories/clinical settings to work together directly in the workplace, as is the case with some of the nursing and allied health professionals. The online platform for blended learning utilised for the modules on this course gives us as educators, the ability to create case studies (possibly along the lines of a differential diagnosis) that incorporate multiple labs/fields. In this way, students on the programme would work in small groups online and use the specialised knowledge of their rotation to add to a larger body of work, thereby presenting the members of their group with an insight into another area of HCS as well as highlighting the importance of multidisciplinary working in clinical and clinically related fields. This could best be achieved by considering three different types of "social group" within the programme at both campus and workplace levels; academics, students, and laboratory staff. This would then allow for considerable overlap in discussion types in these "online communities", while maintaining discrete groups, where appropriate, for specialised functions or roles.

1.3 Online assessment

The T&T Pathway is delivered by blended learning including a high percentage of work based competencies and learning activities. As UWE academic staff are not present to witness or sign off on practical/skill based competencies, a form of record of successful completion of competencies is key to maintain not only a consistent level of assessment throughout the programme, but also in including laboratory supervisors/instructors in the educational process. Blackboard contains several tools, including reflective arenas and limited quizzes, as well as an assessment tool, that may prove useful in identifying the appropriate platform for online assessment of either competency based or academic content based work.

The inclusion of formative assessment throughout provides a means of students to identify areas of strength and weakness, as well as giving academic staff an idea of student progression while undertaking their academic learning at home or during protected time in the workplace. Academic staff are encouraged to investigate effective methods for accomplishing this, though it is recognised and understood that this and other forms of assessment will be driven by the overall programme structure and the division of work based learning (WBL) and theoretical/practical knowledge attained through the academic content online and during campus block periods.

1.4 Social Aspects

From a student experience and engagement perspective, it is recognised that although part of the student body of UWE, the distance nature of the programme limits the potential for students to interact with their peers, and indeed their educators in person. Close lines of communication and discussion will therefore be essential, and developed online through the use of (for example) discussion boards. In the case of some modules these discussion boards may form the platform for including group activities that incorporate reflective

exercises and problem/case based learning. This "networking" approach is designed to enrich the online interactions and promote a feel of belonging to the student body.

With the rise of social networking and media sites, Higher Education Insitutions (HEIs) have begun to explore more fully the power of learning constructed within defined social groups. As with most of UWE modules, Blackboard is recommended as the on-line platform to support module materials etc. This provides an intuitive means of engaging in online discussions in small or larger groups, and potentially as the basis for enquiry based learning elements of appropriate modules, designed to foster transferable teamwork skills essential to the application and implementation of collaborative approaches.

2. Experiential Overview

2.1 General structure

The T&T Pathway model of delivery will be split into units consisting of Learning Packages and Activities.

Each Learning Package unit will contain
- an interactive lecture and/or equivalent teaching aid,
- an interactive quiz,
- and (potentially) any further activities (such as a pdf of written questions etc.).

This will be the structure to present the taught elements of the programme. Reflective assignments/progression exercises will be encouraged within these units.

Each Activities unit will contain
- a short controlled formative assessment (e.g. an online quiz).

Every unit will also have synchronous group work/discussion. Asynchronous group work/discussion will be encouraged in all units.

2.2 Synchronous and Asynchronous group work/discussion

When it comes to online, collaborative work, there are two approaches which should both be considered, and where possible implemented.
- Synchronous group work is that which may be timetabled on a weekly basis where defined groups or the cohort as a whole log in to blackboard for a webinar or discussion where the academic responsible is present and facilitating the session.
- Asynchronous is more akin to a discussion board where input is less regular, and therefore more likely to be done at home or in a protected learning time in the work place where a specific task is not timetabled, and is moderated by an academic but one who does not actively engage except where prompted. This form of group discussion is more applicable to situations where a small group are working together on a piece of coursework/lab report etc that requires application of their knowledge and skills and where shared opinions, theories and skills help to inform group members and lead them towards a collective piece of work.

2.3 Formative Assessment

It is helpful to both student and academic, for the student to engage in regular formative assessment to ascertain how well they are doing, and whether there are areas of weakness that may need addressing, or indeed areas of strength that informs both of particular aptitudes that student may have. This is a particularly crucial area in distance learning where

the opportunity for academic/student interaction at a one to one level or even with a class as whole (as in the case of a practical on campus where student questions and academic troubleshooting aid in progress of the class experience) is more difficult to arrange. Continuous formative assessment through the use of online quizzes (of both a narrative and visual nature) that address academic is essential for effective academic and experiential learning. These quizzes can, in time, also be used as a form of summative assessment through various strategies to be discussed separately.

2.4 Competency/practical knowledge use in assessment and group discussion

While achieving competencies is paramount in this programme to being considered "fit to practice", its use as a form of assessment is, in some cases in appropriate due to both the content of the module in question as well as the opportunities offered to the student to attain those competencies during any specific rotation/specialisation. Therefore validation of competencies above workplace supervisor's approval "on the job" can also come from incorporating work based experiences/competencies into a group based practical write-up where each member is assessed on their designated input. In this way social/group work interaction is encouraged and essential to completion of the piece, and competencies can be assessed in a more general sense without insisting on mandatory completion of a competency that some students (through no fault of their own) are unable to get. This could be seen as analogous to traditional practical reports for component B assessment where a particular dataset and/or practical session is written up individuals or in small groups in the format of a report or poster

2.5 Reflective assignments/progression exercises

Part of the student experience relates to how the student feels they are coping, what they have learned beyond the content delivered online or in person, and what they would change/add to in terms of their approach to skills and attitudes to both learning and practical application. Reflective accounts can be continually added to blogs (thereby falling more into the formative/capability/attitude field of assessment/assignment), one time essays/reports on a particular event, or form part of a larger body of work or portfolio to demonstrate having built on or acquired various transferable skills and work based attributes.

3. Engagement and accessibility

With all of the above, there are several key factors that must be considered when developing any form of technology enhanced learning material for a distance based learning. These factors can be thought of as guidelines, and will be referenced in the module specifications for this programme to indicate an intent to adhere to them wherever possible in the course of content and experiential development.

3.1 Wording and language use

In writing prose for announcements, introductions, briefs on an activity or other similar asynchronous online communications with the enrolled student body, every attempt should be made to use the active tense rather than passive tense. This gives students the sense that what is being written is being/has been done so for them instead of repeated from previous module/programme runs, and enhances their feeling of belonging. The same can easily be said for verbal/audio communication where hearing the voice of the academic, and in a more conversation/engaging way, gives the impression the academic is there for the student and actively interested in their education and overall academic wellbeing.

3.2 Awareness of level of engagement

There is the facility within Blackboard to monitor how frequently students enrolled on a course have visited Blackboard or specific features within. Within this facility is also the

means to create early warnings for the academic when a student has not visited/logged on to Blackboard or participated in a particular activity/discussion for a fixed period of time. This enables academics not to keep track of their students *per se*, but to be made aware more easily of drop off of engagement past a certain point which may require contact be made directly with that student to address the reason behind, and, if appropriate, to facilitate bringing that student back into the cohort.

3.3 Navigation of course within Blackboard

With Blackboard as the platform and interface of the programme, it is imperative that students do not lose interest or become confused with the means of accessing their material or making contact online with their colleagues and educators. While a degree of customisation for individual modules is encouraged, there should remain a standardised approach to navigation within each module that students enrolled on several modules can find the same kinds of information through similarly placed menus, links, and using similar wording. "Learning materials" as the menu choice for accessing lectures and online quizzes for example, should be the standardised use for the course rather than some modules using "Academic content" and others using "Course material". This can become confusing for students who are looking for the same type of content, but are attempting to navigate very different interfaces of Blackboard module runs. Colour coding of module interfaces is therefore encouraged and should be agreed on by all module leaders as a team, so that these similarly laid out Blackboard menus and pages do not become dulled and make it more difficult for the student to know which learning material for which module they are attempting to access.

3.4 Structure

Within modules where lectures traditionally cover one topic over a two hour period "live", engagement of the students present can off wax and wane with interest. Given timetable constraints of the traditional setting, it is not possible to separate a two lecture into chapters with sufficient breaks. Online however, and where appropriate for the content, academics delivering/creating learning material should consider an approach known as "chunking" where the material broken up into more manageable and engaging pieces. This might comprise related chunks of one topic within a lecture but that might be accessed at the student's leisure, or it might involve making a particular chunk of material (or a short quiz, link to read through, video to watch etc) available only when the previous chunk has been attempted or completed. The same holds true for making available each "week's" material only at the appropriate time so as to encourage a linear and logical approach to their learning, rather than providing all necessary asynchronous material for the course at once, and only making the synchronous activities accessible "live".

3.5 Variety

Student engagement if often found to wane when the type of delivery remains unchanged over the period of the module run. It is important therefore that module leaders and the academic teams within a module consider variety in their teaching approach. The simplest example of this would be providing a quiz every week on the academic material covered. Though it could be argued that scheduling a weekly quiz is not providing variety, one might consider making one quiz MCQ and the following quiz short answer. In this way the student may be doing a quiz at the same time every week, but the means by which they answer the questions in those regular quizzes provides a stimulating variety for both knowledge transfer and interaction. Changing the order and type of other learning forms only serves to provide even more variety and should therefore be seriously considered. In addition to student engagement, it should also be noted that academics often deliver the same content in the same manner year after year and are therefore at risk of themselves becoming disengaged with the material and the manner by which they deliver it. Providing variety will therefore also improve staff engagement and interaction.

3.6 Accessibility

Aside from the obvious traditional accessibility issues that must be considered, such as screen readers, appropriate font size and type, and ensuring images online have appropriate titles in case of download failure "for example and image of a heart should have the web title of "heart image" when inserted into a web or blackboard page), there is also the issue of students knowing staff are there for them and there to listen. In this regard guidelines should be put in place that indicate to students that contact by specific means is encouraged, and that though asynchronous and therefore not appropriate to be dealt with/aided in real-time, they will be addressed within an agreed upon timeframe (such as 48 working hours). A variety of forms of contact should be made available, such as e-mail, discussion board "availability slots", or private instant messaging during a "surgery session".

References:

QAA Code of practice for the assurance of academic quality and standards in higher education

Collaborative provision and flexible and distributed learning (including e-learning) – Amplified version. October 2010 (p57-65)

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