



University of the West of England

## CORPORATE AND ACADEMIC SERVICES

### PROGRAMME SPECIFICATION

Part 1: Basic Data	
<b>Awarding Institution</b>	University of the West of England
<b>Teaching Institution</b>	<i>Any institution or organisation, other than UWE, responsible for delivery of the whole or part of the programme.</i>
<b>Delivery Location</b>	Frenchay and Glenside campuses.
<b>Faculty responsible for programme</b>	Health and Applied Sciences
<b>Department responsible for programme</b>	Department of Biological Biomedical and Analytical Sciences
<b>Modular Scheme Title</b>	Undergraduate
<b>Professional Statutory or Regulatory Body Links</b>	Medical Education England Healthcare Science Programme Board.  Institute of Biomedical Science
<b>Highest Award Title</b>	FdSc Healthcare Science
<b>Default Award Title</b>	
<b>Fall-back Award Title</b>	
<b>Interim Award Titles</b>	Cert.HE Healthcare Science
<b>UWE Progression Route</b>	BSc (Hons) Healthcare Science
<b>Mode(s) of Delivery</b>	<i>Blended learning / Distance Learning</i>
<b>Codes</b>	<b>UCAS: C992</b> <b>JACS:</b> <b>ISIS2:</b> <b>HESA:</b>
<b>Relevant QAA Subject Benchmark Statements</b>	Biosciences, Biomedical Science
<b>CAP Approval Date</b>	
<b>Valid from</b>	September 2013
<b>Valid until Date</b>	
<b>Version</b>	1

### Part 2: Educational Aims of the Programme

The FdSc Healthcare Science degree is part of the university's extensive Healthcare and Biomedical science provision and is designed to provide the principal training route for Healthcare Science Associates. This exciting course is delivered through a unique collaboration between the University of the West of England, Cogent, the Skills Council for

## Part 2: Educational Aims of the Programme

science based industry, and local NHS providers within the south-west region, and has been developed in direct response to the Modernising Scientific Careers (MSC) programme at the Department of Health, which has been established to develop a common career pathway, education and training standards for Healthcare Scientists, and to improve patient protection and safety through better professional regulation.

NHS Trusts within the West of England region are at the forefront of the NHS Quality, Innovation, Productivity and Prevention (QIPP) agenda and are working directly with the Department of Health to shape future workforce planning and development through the SW MSC Workforce Groups. In response to employer demand, UWE Bristol was involved in a successful City of Bristol College led regional bid to the Higher Apprenticeship fund that sought to achieve 586 Higher Apprenticeship starts from September 2012 to September 2015. UWE is leading on the development of a Higher Apprentice 'Healthcare Scientist' Foundation Degree to provide the 'knowledge component' within a new level 5 Healthcare Scientist framework that is being developed by Cogent.

Students on this programme will be employed as trainee Healthcare Science Associates in pathology laboratories, clinical physiology departments or community health centres and will undertake the foundation degree as part of their training. They will then be in full-time employment upon completion of the programme. However if their employers wish them to progress to Healthcare Practitioners then they will have the necessary academic background to progress to the final year of our BSc Healthcare Science degrees, although they may need to top-up some content to progress onto specific pathways.

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 the two year course, and to demonstrate specified standards of practice.

Specifically, the programme aims to provide the students with:

- A broad knowledge base in healthcare sciences with specific areas of deeper understanding relevant to their role.
- The opportunity to develop specialist skills and knowledge through work based learning in healthcare science laboratories or clinical environment.
- Extensive use of blended approaches to support work-based-learning.
- An understanding of the importance of effective communication, patient-centred care, evidence-based practice, clinical audit and multidisciplinary team working.
- The underpinning knowledge to enable students to gain the accompanying skills and attitudes to work as a Healthcare Science Associate
- An excellent preparation for work after graduation in the NHS as a Healthcare Science Associate with the opportunity for students to develop specialist knowledge and skills within pathways specifically designed for the pursuance of a career as a Healthcare Science Practitioner.

The current economic climate has driven down budgets and placed great strain upon training budgets. Apprenticeships are one of the many ways in which employers within the health sector are seeking to address some of these increasing pressures. A qualified and competent support workforce is vital to the patient experience and to the smooth running of services. These apprenticeships develop both academic skills and specific vocational skills for a chosen area of work.

## Part 2: Educational Aims of the Programme

Typically, holders of the qualification will be able to:

- Use a range of established techniques to initiate and undertake analysis of information, and to propose solutions to problems arising from that analysis
- Effectively communicate information, arguments and analysis in a variety of forms to specialist and non-specialist audiences, and deploy key techniques of the discipline effectively
- Undertake further training, develop existing skills and acquire new competences that will enable them to assume significant responsibility within organisations.

And holders will have:

- The qualities and transferable skills necessary for employment requiring the exercise of personal responsibility and decision-making. ‘

Cogent, the Skills Council for science based industries, in collaboration with the MSC team at the Department of Health (DH) are developing level 5 Higher Apprenticeships for the role of Associate Practitioners using relevant Specification of Apprenticeship Standards for England (SASE) compliant Foundation Degrees. The programme design of the University's Foundation Degree in Healthcare Science offers the flexibility to respond to their specifications with a programme that will enable health sector employees to undertake a Foundation Degree which combines elements of competence and technical knowledge in accordance with SASE requirements as well as ensuring the developing workforce needs of employers.

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

Graduates will have a broad knowledge base in healthcare sciences, with specific areas of deeper understanding relevant to their role within the health services. Graduates will have developed specialist skills and knowledge through work-based learning within healthcare science laboratories, clinical environments or community practices. They will understand the importance of effective communication, patient-centred care, evidence-based practice, clinical audit and multidisciplinary team working. The degree is an excellent preparation for work as a Healthcare Science Associate with the opportunity for graduates to develop specialist skills and knowledge within pathways specifically designed for a career as a Healthcare Science Practitioner.

## Part 3: Learning Outcomes of the Programme

As a SASE compliant degree within the Higher Apprenticeship framework the Foundation Degree must provide evidence that the individual has achieved:

- a) The competencies required for performance in the particular occupation or role;
- b) The technical skills and knowledge/understanding of the theoretical concepts specifically relating to the occupation or role.
- c) The development of six Personal Learning and Thinking Skills (PLTS) – Independent enquiry, creative thinking, reflective learning, team working, self-management and effective partnership. The learning outcomes for these have been mapped across all modules of the programme using the MSC Personal, Cognitive And Professional Skills Framework (*see CDA2 Programme Design Context, Appendix 3*)
- d) The completion of a handbook which will evidence their achievements of the Employer Rights and Responsibilities (ERR) national outcomes.

The award route provides opportunities for students to develop and demonstrate knowledge

### Part 3: Learning Outcomes of the Programme

and understanding, qualities, skills and other attributes in the following areas:

<b>Learning Outcomes:</b>	Module No:USSJT5-30-1	Module No:USSJT6-30-1	Module No:USSJT7-30-1	Module No:USSJT8-30-1	Module No:USSJT9-30-2	Module No:USSJTA-60-2	Module No:USSJTC-30-2
<b>A) Knowledge and understanding of:</b>							
Demonstrate an underpinning knowledge of anatomy, physiology, cell biology, genetics, pharmacology and pathology that provides the foundations for study in any of the divisions of Healthcare Science	X		X	X		X	
Understand the context of healthcare sciences and their application to practical problems		X	X			X	X
Understand the importance of patient-centred care, evidence-based practice, clinical audit and multidisciplinary team working		X			X		X
Understand a broad range of diagnostic and therapeutic measurement techniques including the rationale for the investigation, modification of the investigation, interpretation of test results and treatment of disease		X	X		X	X	
Demonstrate competence in specific areas of scientific measurement with an understanding of the clinical 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			X	X	
<b>(B) Intellectual Skills</b>							
Actively question and seek information	X	X	X	X	X	X	X
Compare and contrast information from different sources	X	X	X	X	X	X	X
Evaluate information against hypotheses in a range of scenarios		X			X	X	
Actively analyse and apply problem-solving strategies	X	X	X	X	X	X	X
Demonstrate independent and self-directed learning	X	X	X	X	X	X	X
Develop reflective skills		X					X
<b>(C) Subject/Professional/Practical Skills</b>							
Observe, analyse and evaluate information arising from a wide range of sources	X	X	X	X	X	X	X
Communicate effectively scientific data and concepts using a range of communication strategies, showing awareness of the needs of the audience	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 analyse data using appropriate assessment techniques, working as an individual or within a team	X	X	X	X	X	X	
Demonstrate an understanding of the research process, including the current ethical and legal		X			X	X	X

### Part 3: Learning Outcomes of the Programme

frameworks within which research can be conducted in the UK, through the execution of a research project							
<b>(D) Transferable skills and other attributes</b>							
Communicate information, advice, instruction and professional opinion effectively and appropriately to colleagues, patients, clients, users, their relatives and carers	X	X	X	X	X	X	X
Analyse data arising from various means of biological inquiry	X	X	X	X	X	X	
Undertake active learning and development	X	X	X	X	X	X	X
Apply information management skills	X	X	X	X	X	X	X
Practice effective time management	X	X	X	X	X	X	X
Work effectively as a team member		X				X	X
Demonstrate an autonomous and reflective approach to lifelong learning	X	X	X	X	X	X	X

### Part 4: Student Learning and Student Support

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

The FdSc Healthcare Science degree integrates scheduled and independent academic and work based learning through close collaboration between employers and the programme provider. Apprentices on entry to the Higher Apprenticeship Framework will have a contract of employment and be working more than 16 hours per week.

**In each academic year students will take 120 credits equating to four 30-credit modules in the first year and two 30 credit plus one 60 credit module in the second year. The 120 credits equate to 1200 hours of guided and independent learning. 80% of the apprentice's programme will be on the job training. The apprentices will spend up to 160 hours at UWE and a minimum of 1040 hours in practice per year.**

#### Guided learning hours (GLH)

To comply with the Education and Skills Act 2008 the Higher Apprenticeship framework must include a minimum of 280 GLH per 12 month period. These hours are further defined as "on the job" or "off the job" guided learning.

- On the job guided learning in the workplace will be a minimum of 16 hours a week over 44 weeks.
- Off the job guide learning is delivered away from immediate pressures of the job when the apprentice has no responsibility of any aspect of patient/client care. The apprentices will attend UWE for up to 20 days per year equating to 160 off the job learning hours. Additional off the job learning will be made available by the apprentice's employer depending on the Associate Practitioner role to be undertaken for additional, scheduled, online learning.

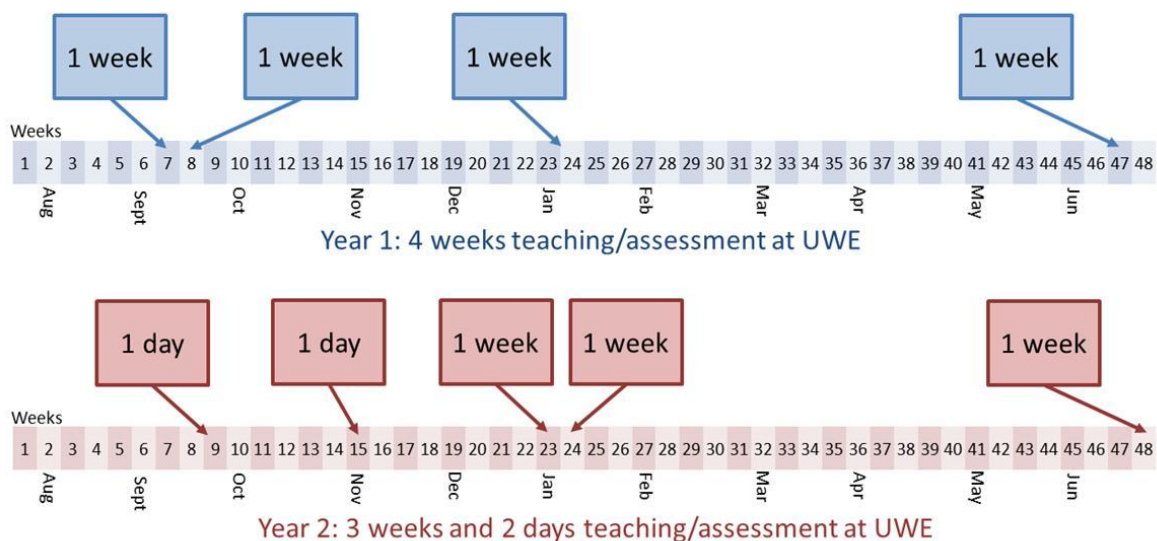
All GLH will be delivered within the apprentice's contracted hours. As can be seen the learning experiences through the Higher Apprenticeship Framework in the Foundation Degree allows for these hours to be adequately covered ensuring a balance of learning opportunities for the development of practical skills and the application of knowledge.

Within the programme students will undertake 65% guided (scheduled and work-based) and

## Part 4: Student Learning and Student Support

35% independent learning.

### Attendance Pattern



**Scheduled learning** includes up to 20 days per year at the university in seminars, tutorials, demonstrations and practical classes; work based learning, 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 or in a protected learning time in the work place 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.

**Workbased learning:** Work based skills will be gained during on the job training which will be based on the appropriate professional competencies. 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.

### Support in Practice

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 in year 1 will include introductory sessions to the technology-based resources used on this programme.

Learning activities in the student's workplace will be guided and assessed through a competency portfolio that not only reflects core competencies required for the role, but has the flexibility to 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

#### **Part 4: Student Learning and Student Support**

programme is truly employer responsive and will be captured within the learning agreement.

Learning is evidenced through observation and evaluation of procedural/technical or practical skills performed by a student in a live environment and case based discussions which provide structured teaching and feedback in areas of clinical or technical practice, enabling the discussion of the context, professional, ethical and governance framework of practice, encouraging a reflective approach to learning. The practice portfolio will be used to organise evidence and record outcomes.

The development of these competencies will be supported in the work place through additional TEL support materials provided by UWE through Blackboard and appropriately trained work base mentor. The work based mentors will also have access to the information sets and interactive sites on Blackboard.

Therefore there will be a joint approach to monitoring the apprentice's achievements which will include academic staff as well as work based assessors and mentors. There is the facility within Blackboard to monitor how frequently students have visited Blackboard or specific content. Within this facility there 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 to be made directly with that student to address the reason behind, and, if appropriate, to facilitate bringing that student back into the cohort.

#### **Description of any Distinctive Features**

Students on the FdSc HCS programme 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.

*See FdSc TEL Strategy – CDA2 Programme Design Context Appendix 4*

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.

This programme offers a Higher Apprenticeship and a Foundation Degree. In keeping with the ethos of an apprenticeship, the programme 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 5: Assessment

Approved to [University Regulations and Procedures](#)

### Assessment Strategy

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

#### Strategy Aims

- To provide an evidence base for the assessment strategy
- To provide a portfolio of assessment types to students that robustly assesses student learning in terms of both knowledge, skills and competency
- To provide parity of expectation of student effort within the programme given the individualised nature of the learning contracts of students on the programme

This strategy has been written to provide an evidence base for the assessment strategy in the Foundation Science Degree in Healthcare Science (FdSc HCS), and to explain to those taking the course why they are assessed in the manner they are. This strategy creates a balanced assessment programme for all students in terms of both the breadth of assessment types encountered and the approximate workload for all students on the programme and is designed to assess the skills/competencies and the knowledge base expected of a foundation degree level graduate in healthcare science.

The FdSc HCS programme is delivered by blended learning including a high percentage of work-based learning activities and related assessments. Students take six 30 credit and one 60 credit module(s) across both years, and in some cases these modules will have a high degree of student choice in terms of activities within a portfolio of work; reflecting the diverse range of laboratory and diverse clinical settings they will be employed in. These modules have had their assessments checked against the strategy to enable the assessment of a breadth of skills (and competencies) as well as knowledge. Students also undertake some assessments that are taken by students attending the campus-delivered undergraduate degree that this FdSc has a progression route onto, to provide equivalence of experience in terms of academic assessment for those FdSc students that choose to progress to the full BSc.

A range of suitable assessment methods including portfolios of evidence, case-study based activities, production of reports appropriate to their employment sector with reflections, oral and/or poster presentations, and evidence of work-based learning such as learning diaries with reflective commentaries. The assessment of national occupational standards within the modular framework of the award is also identified as crucial in an assessment strategy for the programme. The requirement for assessments to map to learning outcomes is also central to the expectations with the use of continuous formative assessment within a varied diet of summative assessments.

The students will also be offered a range of formative assessment opportunities throughout the programme. In particular, there will be online tests that they can complete to enhance their knowledge and understanding as well as to track their own progress.



## Part 5: Assessment

### Assessment Map

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

#### Assessment Map for FdSc Healthcare Science

		Type of Assessment*					
		Unseen Written Exam	Practical Exam	Oral assessment and/or presentation	Competency Assessment	Written Assignment	Report / Project
Compulsory Modules Level 1	Module No USSJT5-30-1	A (40)		B (30)		B (30)	
	Module No USSJT6-30-1	B (100)			A (P/F)		
	Module No USSJT7-30-1	A (40)		B (30)		B (30)	
	Module No USSJT8-30-1	A (25)	A (25)			B (25)	B (25)
Compulsory Modules Level 2	Module No USSJT9-30-2	A (50)				B (25)	B (25)
	Module No USSJTA-60-2	A (50)		B (20)		B (20)	B (10)
	Module No USSJTC-30-2				A (P/F)		B (100)

\*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, including: level and credit requirements, interim award requirements, module diet, including compulsory and optional modules

ENTRY	Year 1	Compulsory Modules	Optional Modules	Interim Awards
		USSJT5-30-1 Scientific Basis of Life	None	Cert. HE Healthcare Science
USSJT6-30-1 Principles in Healthcare Science				
USSJT7-30-1 Pathophysiology of Disease				
USSJT8-30-1 Anatomy and Physiology				
	Year 2	Compulsory Modules	Optional Modules	Interim Awards
		USSJT9-30-2 Scientific Measurement	None	
		USSJTA-60-2 Healthcare Science in Practice		
		USSJTC-30-2 Professional Aspects of Healthcare Science		

### Part time:

Part-time students can select an appropriate selection of modules for each year of study subject to pre-requisites and advice from the programme manager

## Part 7: Entry Requirements

- Candidates will be in relevant full employment
- As the Higher Apprenticeship Framework is constructed within the Foundation Degree programme, an IELTS score of 7 overall, with a minimum of 6.5 in each section is required.
- Applicants should be progressing from the Advanced Level Apprenticeship in a related scientific discipline or at the start of their Apprenticeship have achieved at least 200 points at A/AS level including DD at GCE A2 for two Science subjects, including the science subject which is the main component of the Foundation Degree, HND Diploma or HNC Diploma; and at least 5 GCSE's including Maths, English and 3 other subjects at C or above.
- Equivalent qualifications may also be acceptable (refer to UWE website for requirements) and would be judged on individual merit.

## Part 8: Reference Points and Benchmarks

The mission and vision of the University of the West of England is to

*'advance an inclusive, civilised and democratic society and its enrichment through education, consultancy and public service'*

The University of the West of England aspires to be the partnership university of the South West and aims of the Department of Applied Sciences and the Foundation Degree in Healthcare Science is entirely consistent with this and are firmly set within this context.

### • **Qualification descriptors used in the QAA Framework for Higher Education Qualifications**

The learning outcomes for the programme have been developed with reference to the qualification descriptors used in the QAA Framework for Higher Education Qualifications (QAA, 2008). The learning outcomes for modules at level one and level two have been considered to be consistent with the descriptors for a higher education qualification at level 4 (Certificate of Higher Education) and level 5 (Foundation Degree) respectively.

The descriptor provided for this level of the FHEQ is for any Foundation Degree which should meet the descriptor in full. This qualification descriptor can also be used as a reference point for other level 5 qualifications, including Diplomas of Higher Education, Higher National Diplomas etc.

### **Foundation Degrees are awarded to students who have demonstrated:**

- Knowledge and understanding of the well-established principles of their area(s) of study, and of the way in which those principles have developed
- Ability to apply underlying concepts and principles outside the context in which they were first studied, including, where appropriate, the application of those principles in an employment context
- Knowledge of the main methods of enquiry in the subject(s) relevant to the named award,

## Part 8: Reference Points and Benchmarks

and ability to evaluate the appropriateness of different approaches to solving problems in the field of study

- An understanding of the limits of their knowledge, and how this influences analyses and interpretations based on that knowledge.

### Typically, holders of the qualification will be able to:

- Use a range of established techniques to initiate and undertake analysis of information, and to propose solutions to problems arising from that analysis
- Effectively communicate information, arguments and analysis in a variety of forms to specialist and non-specialist audiences, and deploy key techniques of the discipline effectively
- Undertake further training, develop existing skills and acquire new competences that will enable them to assume significant responsibility within organisations.

### And holders will have:

- The qualities and transferable skills necessary for employment requiring the exercise of personal responsibility and decision-making. ‘

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. This collaboration will ensure that the programme is grounded in extending the boundaries of the practitioners’ knowledge and skills to enable them to effectively contribute to the design, conduct, rigour and dissemination of high quality clinical research.

### • QAA Code of Practice for Collaborative provision and flexible and distributed learning (including e-learning),

The QAA Code of Practice 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 use of TEL and blended learning approaches are key to the success of this programme from an academic content standpoint, largely due to the distance/work based learning nature of the course that requires students enrolled to be away from the university for the majority of

## Part 8: Reference Points and Benchmarks

their time. To this end a number of TEL enhancements to current academic content delivery as well as design and development of a number of new tools and approaches are currently underway. In addition to online delivery of lecture material, e-learning and TEL approaches include synchronous and asynchronous scheduled and self-directed learning, as well as collaborative and interactive tasks and activities to promote engagement with academic material as well as colleagues/classmates and academics/workplace supervisors.

The Code of Practice also highlights the need for student responsibility in responding to online requests and participating in online activities. These expectations and guidelines will be laid out early on in the programme.

There will be a joint approach to monitoring the apprentice's achievements which will include academic staff as well as work based assessors and mentors. There is the facility within Blackboard to monitor how frequently students have engaged with the online material and to create "early warnings" 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 to be made aware of drop off in 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.

<http://www.qaa.ac.uk/Publications/InformationAndGuidance/Pages/Code-of-practice-section-2.aspx>

- **Modernising Scientific Careers Curriculum**

The programme has been closely designed against the learning outcomes and indicative content set out within the *Modernising Scientific Careers Programmes for BSc (Hons) in Healthcare Science, Life Sciences and Physiological Sciences 2011/12*, and competencies listed in the *Healthcare Science Practitioner Training Programme Training Manual 2011/12* for the respective Division,

- **Subject benchmarks**

**Biosciences** - By definition, according to the Biosciences Benchmark Statement, the biosciences are "a family of methods and disciplines grouped around the investigation of life processes"; "practical and experimental subjects"; and "subjects that combine scientific rigour with an acceptance of diversity and variability", all of which are fundamental principles for Healthcare Science. The following statement is relevant to this programme: "Studies in the biosciences encourage an understanding of multidisciplinary, an enquiring attitude and an appreciation of complexity. They require development of competence in team and individual working as well as in numeracy (often including information technology, statistics and bioinformatics). Programmes also develop proficiency in preparing reports in a written format for many different purposes and in delivering presentations".

In relation to the benchmark threshold standard for degree programmes where the study of organisms is key, it is stated that students should be able to: "describe basic organism structure and diversity"; "describe mechanisms for the life processes and appreciate how the physiology of an organism fits it for its environment"; "show an appreciation of the integration of metabolism"; "show knowledge of the basic genetic principles relating to and evolution of the organisms studied"; and "appreciate the importance of the 'behaviour' of the organisms studied". These threshold standards can be met through a range of modules within this programme.

## Part 8: Reference Points and Benchmarks

The benchmark typical standard includes students being able to: “recount the interactions of structure and metabolic function at cellular and organism levels”; “describe and 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”; and “assess the contribution of ‘behaviour patterns’ to survival and success”, which likewise map to compulsory modules within this programme.

**Biomedical Science** – The Life Science content within the FdSc Healthcare Science degree is consistent with the Biomedical Science benchmark with a multi-disciplinary approach. At level 1 modules provide a foundation of generic Healthcare Science and specific Life Science division content including scientific and analytical skills, biology of disease, biochemistry, microbiology, and genetics. By the end of level 2 students have increased the proportion of discipline-specific knowledge, placement practice, and blended learning.

Students gain an appreciation of biomedical science (BMS) as a “multidisciplinary approach to the study of human disease” and will also develop “an awareness of the current methods used for the laboratory investigation, diagnosis and monitoring of disease...”.

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.

**Clinical Science** - This benchmark statement describes the nature and standards of programmes of study and training in clinical science that lead to awards made by the Association of Clinical Scientists. Traditionally training for Clinical Physiologists has been at post-graduate level which is reflected within this QAA benchmark, with learning outcomes for cardiology physiologists and respiratory physiologists mapped to the Health & Care Professions Council Standards of Proficiency. Certain of those learning outcomes are equally appropriate for the Physiological Science content within the FdSc Healthcare Science degree. Level-1 introduces the scientific basis of healthcare. Work-based learning enables students to experience the clinical interface with healthcare scientists, other health professionals and patients. During level-2 learning students increase the proportion of discipline-specific knowledge and develop the skills to gather relevant information from a wide range of sources including electronic data; use appropriate assessment techniques; undertake and record a thorough, systematic and detailed assessment using appropriate techniques and equipment; and analyse and evaluate the information collected.

The benchmark typical standard includes students being able to: deliver quality patient/client-centred care; practice in an anti-discriminatory manner; draw on appropriate knowledge and skills in order to make professional judgements; recognising the limits of their practice and knowing when to seek advice; summarise and present complex scientific ideas in an appropriate form, all of which map to professional competencies throughout the programme.

- **Health & Care Professions Council Standards**

The FdSc Healthcare Science programme is consistent with the Health & Care Professions Council standards, in particular:-

## Part 8: Reference Points and Benchmarks

- Health Professions Council (2009) *Standards of Education and Training*
- Health Professions Council (2008) *Standards of Conduct, Performance, and Ethics*

### • 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 take responsibility for facilitating that learning. Module learning outcomes have been designed to ensure that students meet the overall programme learning outcomes on completion of the programme.

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 summative and formative assessment activity as an integral part of the learning and teaching process. All assessments comply with the University Assessment Policy and Academic Regulations and Procedures.

What methods have been used in the development of this programme to evaluate and improve the quality and standards of learning? This could include consideration of stakeholder feedback from, for example current students, graduates and employers.

The department has excellent links with the relevant practitioners in the area. Employers have been actively involved in the design, delivery and continued development of the Healthcare Science programmes from the BSc Healthcare Science (Life and Physiological Sciences) programmes through to the FdSc degree via Educational Development Workshops, employer liaison groups, the Joint Training Officers Committees, and the programme design team. These discussions have centered on the curriculum, competencies and training manuals.

In addition the programme development team have been collaborating with Shirley Fletcher, the Modernising Scientific Careers lead for Career Frameworks 1-4; Christine Sakhardande, Science Technicians Programme Manager & Quality Manager Cogent Skills Sector Council for the science based industries; Dr Diane Crawford Scientific Director, NHS South of England (West); and Chris Doncom, Education Contracts and Quality Manager, NHS South of England, on the development of the programme and its compliance with the SASE compliant framework for a new Higher Level Apprenticeship for Life Science and Chemical Science professionals.

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](#).