University of the West of England
BRISTOL

**PROGRAMME SPECIFICATION**

| **Part 1: Information** | |
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| **Awarding Institution** | University of the West of England, Bristol |
| **Teaching Institution** | University of the West of England, Bristol |
| **Delivery Location** | Frenchay Campus |
| **Study abroad / Exchange / Credit recognition** | N/A |
| **Faculty responsible for programme** | Health and Applied Sciences |
| **Department responsible for programme** | Applied Sciences |
| **Professional Statutory or Regulatory Body Links** | • National School of Healthcare Science<br>• Institute of Physics and Engineering in Medicine |
| **Highest Award Title** | BSc (Hons) Healthcare Science (Clinical Engineering)<br><br>Pathways:<br>• BSc (Hons) Healthcare Science (Radiation Engineering)<br>• BSc (Hons) Healthcare Science (Rehabilitation Engineering)<br>• BSc (Hons) Healthcare Science (Medical Engineering)<br>• BSc (Hons) Healthcare Science (Renal Technology) |
| **Default Award Title** | |
| **Interim Award Titles** | BSc Healthcare Science<br>Cert HE Healthcare Science<br>Dip HE Healthcare Science |
| **UWE Progression Route** | |
| **Mode of Delivery** | FT / PT / DA (degree apprenticeship) |
| **ISIS code/s** | I510 |
| **For implementation from** | September 2017 |

**Part 2: Description**

The BSc (Hons) Healthcare Science (Clinical Engineering) programme is part of the University's extensive Healthcare Science provision to provide the principle training route for Healthcare Science Practitioners and is aligned with the employer led Education and Skills Funding Agency Level 6 Healthcare Science Practitioner Degree Apprenticeship Standard. 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 Clinical Engineers (described as a **Practitioner Training Programme** or **PTP**), with professional specialisms in:

- Radiation Engineering
- Rehabilitation Engineering
- Medical Engineering
- Renal Technology

as defined by Health Education England.

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 unique delivery of the course allows NHS staff to complete the qualification whilst remaining in-post through a combination of innovative online materials and focused block-release at UWE.

**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.
- The opportunity for students to develop the skills to reflect and review their own practice (both academically and professionally) and strive to improve personal performance.
- Development of the necessary skills and attributes for further professional development, through academic study and continual lifelong learning as enterprising healthcare science professionals.
- Embedded service user and carer interaction to put patient care at the heart of the training.

**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, multidisciplinary team working and sustainable development.
- 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.
- A broad knowledge base in medical engineering and biosciences with specific areas of deeper understanding relevant to healthcare sciences.
- A unique opportunity for students to develop specialist knowledge and skills within pathways specifically designed (and professionally required) for the pursuance of a career as a Healthcare Scientist in the NHS.

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

The Clinical Engineering programme is a professionally accredited course that integrates theoretical and practical approaches to understanding medical engineering in the context of the human body in health and disease. It provides a foundation in core engineering and bioscience subjects that builds to a choice of science specialisms at more advanced levels, e.g. radiation, rehabilitation, medical engineering & renal technology. These subjects are supported by practical investigations to develop student proficiencies in data analysis, diagnosis and problem solving. Central to the programme is the clinical engineering professional work-based training portfolio which is an essential component of the student's career progression.

| **Part 2: Description** |
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| **Regulations** |
| A: Approved to University Regulations and Procedures<br><br>No modules can be considered for condonation.<br><br>Aegrotat awards will not give eligibility for NSHCS accreditation. |

**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:

| ***Learning Outcomes:*** | USSKL6-30-1 Scientific Basis of Engineering | USSJT6-30-1 Principles in Healthcare Sci. | USSJT7-30-1 Pathophysiology of Disease | USSJT8-30-1 Anatomy & Physiology | USSJT9-30-2 Scientific Practice | USSKLB-30-2 Advanced Clinical Engineering | USSKLC-30-2 Applied Clinical Engineering | USSJTC-30-2 Prof. Aspects of Health. Sci. | USSKLD-30-3 Advanced Radiation Engineering | USSKLE-30-3 Advanced Rehabilitation Eng. | USSKLG-30-3 Applied Radiation and Med. Eng. | USSKLF-30-3 Adv. Renal and Medical Eng. | USSKLH-30-3 Applied Rehab. and Renal Eng. | USSJSJ-30-3 Healthcare Science Project | USSJSK-30-3 Prof. Prac. for Health. Sci. | USSKLM-30-3 Prof. Healthcare Science Practice |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| **A) Knowledge and understanding of:** | | | | | | | | | | | | | | | | |
| Demonstrate an underpinning knowledge of engineering and biosciences that provides the foundations for study in the Clinical Engineering pathways of Healthcare Science. | x | | x | x | | x | x | | | | | | | | | |
| Understand the context of healthcare sciences and their application to practical problems. | | | | | | | | x | | | | | | x | x | x |
| Understand a broad range of diagnostic measurement techniques including the rationale for the investigation | | x | | | | x | x | x | x | x | x | x | x | | | |
| Demonstrate competence in specific areas of medical engineering and 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 | x | x |
| **(B) Intellectual Skills** | | | | | | | | | | | | | | | | |
| Actively question and seek relevant information. | | x | | | x | | | | x | x | x | x | x | x | x | x |

**Part 3: Learning Outcomes of the Programme**

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|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 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 | | |
| Actively analyse and apply problem-solving strategies. | | | | | | 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 |
| **(C) Subject/Professional/Practical Skills** | | | | | | | | | | | | | | | | |
| Understand the importance of patient-centred care, evidence based practice, clinical audit and multidisciplinary team working. | | | | | | | | x | | | | | | x | x | x |
| Critically observe, analyse and evaluate information arising from a wide range of sources. | | | | | | | | | 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 workplace practice. | x | x | x | x | x | x | 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 | 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 | x |
| Obtain, record, collate and critically analyse data using appropriate practical techniques, working as an individual or within a group. | x | | x | x | x | 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 | x |
| **(D) Transferable skills and other attributes** | | | | | | | | | | | | | | | | |
| Communicate information, advice, instruction and professional opinion to colleagues, patients, clients, users, their relatives and carers. | | | | | | | | x | | | | | | x | x | x |
| Critically analyse data arising from various means of engineering, biological or work-based inquiry. | | | | | | x | x | | x | x | x | x | x | x | x | x |
| Undertake active learning and development. | | | | | | | | | | | | | | x | x | x |
| Apply information management skills to their learning and practice. | x | x | x | x | x | 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 | x | x | x | x | x |
| Demonstrate an autonomous and reflective approach to lifelong learning. | | | | | | x | x | x | x | x | x | x | x | x | x | x |

| **Part 4: Programme Structure** |
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| This structure diagram demonstrates the student journey from Entry through to Graduation for a typical **full time student**, including:<br>• level and credit requirements<br>• interim award requirements<br>• module diet, including compulsory and optional modules |

| | | Compulsory Modules | Optional Modules | Interim Awards |
|---|---|---|---|---|
| **ENTRY** | Year 1 | • USSKL6-30-1 Scientific Basis of Engineering<br>• USSJT6-30-1 Principles in Healthcare Science<br>• USSJT7-30-1 Pathophysiology of Disease<br>• USSJT8-30-1 Anatomy & Physiology | None | Cert HE Healthcare Science<br><br>Credit requirements: 120 |

| | Compulsory Modules | Optional Modules | Interim Awards |
|---|---|---|---|
| Year 2 | • USSJT9-30-2 Scientific Practice<br>• USSKLB-30-2 Advanced Clinical Engineering<br>• USSKLC-30-2 Applied Clinical Engineering<br>• USSJTC-30-2 Professional Aspects of Healthcare Science | None | Dip HE Healthcare Science<br><br>Credit requirements: 240 |

| | Compulsory Modules | Optional Modules | Interim Awards |
|---|---|---|---|
| Year 3 | • USSJSJ-30-3 Healthcare Science Project<br><br>**For FT / PT delivery**<br>• USSJSK-30-3 Professional Practice for Healthcare Science<br><br>**OR**<br><br>**For DA delivery (contains DA End Point Assessment)**<br>• USSKLM-30-3 Professional Healthcare Science Practice | Students must opt for one of the following four pathways:<br><br>**Radiation Engineering**<br>• USSKLD-30-3 Advanced Radiation Engineering<br>• USSKLG-30-3 Applied Radiation and Rehabilitation Engineering<br><br>**Rehabilitation Engineering**<br>• USSKLF-30-3 Advanced Rehabilitation and Renal Engineering<br>• USSKLG-30-3 Applied Radiation and Rehabilitation Engineering<br><br>**Medical Engineering**<br>• USSKLE-30-3 Advanced Medical Engineering<br>• USSKLH-30-3 Applied Renal and Medical Engineering<br><br>**Renal Technology**<br>• USSKLF-30-3 Advanced Rehabilitation and Renal Engineering<br>• USSKLH-30-3 Applied Renal and Medical Engineering<br><br>Due to professional portfolio requirements students will not be able to transfer between pathways within Year 3 | BSc Healthcare Science<br><br>Credit requirements: 300<br><br>[Only available to students entering Year 3 from C992 UWE FdSc Healthcare Science] |

**GRADUATION**

**Part 5: Entry Requirements**

The University's Standard Entry Requirements apply with the following additions/exceptions:

- Candidates must be in employment in a relevant role in a clinical engineering department. Note: to access funding from the employing institution's apprenticeship levy the candidate must be employed in a higher apprenticeship role (further details on the Education & Skills Funding Agency funding requirements can be found here).
- Equivalent qualifications and/or work experience may also be acceptable (refer to UWE website for requirements) and would be judged on individual merit.
- All students graduating from the UWE C992 FdSc Healthcare Science programme (with a Clinical Engineering specialism) will be able to enter the BSc (Hons) Healthcare Science (Clinical Engineering) at Level 6. The FdSc maps identically to the BSc at Levels 4 & 5, and applies the same entry requirements.

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

**Health assessment/declaration/vaccinations.** Applicants must be in good health and be up-to-date with routine immunisations e.g. tetanus, diphtheria, polio and MMR. Applicants who are offered a place will be required to complete a questionnaire and must be prepared to undergo a medical examination. Applicants will also be required to confirm their status in respect of a number of infectious diseases and immunisations (tuberculosis, measles, mumps, rubella, chicken pox, varicella, hepatitis B, hepatitis C, HIV antibodies) and be prepared to have all required vaccinations. If vaccinations are not up-to-date this will affect ability to continue on the course. Concerns with regards to vaccinations should be raised at the point of application.

**Disclosure of Criminal Background**. The Rehabilitation of Offenders Act 1974 does not apply and all convictions, including those which are spent, must be disclosed. This is in accordance with the Rehabilitation of Offenders Act 1974 (Exceptions) Order 1975. Applicants who are offered a place must undergo a Disclosure and Barring Service (DBS) check and will be required to complete a Disclosure Application Form. All information will be treated in confidence and only taken into account when absolutely necessary.

**Part 6: Reference Points and Benchmarks**

QAA UK Quality Code for HE
-Framework for higher education qualifications (FHEQ)
-Subject benchmark statements
- Engineering (2015)
- Biomedical Science (2015)

UWE Strategy 2020
UWE academic policies
UWE Education for Sustainable Development

The course adheres to the professional body requirements for the:

- National School of Healthcare Science (Practitioner Training Programme in Clinical Engineering)
- Institute of Physics and Engineering in Medicine (Practitioner Training Programme in Clinical Engineering)

The course is aligned to the requirements of the Education & Skills Funding Agency Level 6 Healthcare Science Practitioner Degree Apprenticeship Standard.

**FOR OFFICE USE ONLY**

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| First CAP Approval Date | 23/2/2017 | | | |
| Revision CAP Approval Date | 20/7/2017 | Version | 2 | MIA_10706 |
| Next Periodic Curriculum Review due date | | | | |
| Date of last Periodic Curriculum Review | | | | |