



Programme Specification

Healthcare Science (Radiation Engineering) {Apprenticeship-UWE} [Frenchay]

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Section 1: Key Programme Details

Part A: Programme Information

Programme title: Healthcare Science (Radiation Engineering) {Apprenticeship-UWE} [Frenchay]

Highest award: BSc (Hons) Healthcare Science (Radiation Engineering)

Interim award: BSc Healthcare Science (Radiation Engineering)

Interim award: DipHE Healthcare Science (Radiation Engineering)

Interim award: CertHE Healthcare Science (Radiation Engineering)

Awarding institution: UWE Bristol

Teaching institutions: UWE Bristol

Study abroad: No

Year abroad: No

Sandwich year: No

Credit recognition: No

School responsible for the programme: CHSS School of Applied Sciences,
College of Health, Science & Society

Professional, statutory or regulatory bodies:

Institute of Physics & Engineering in Medicine (IPEM)

National School of Healthcare Science (NSHCS)

Apprenticeship: ST0413

Modes of delivery: Full-time

Entry requirements: For the current entry requirements see the UWE public website.

For implementation from: 01 September 2024

Programme code: I51D00

Section 2: Programme Overview, Aims and Learning Outcomes

Part A: Programme Overview, Aims and Learning Outcomes

Overview: 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 specialism in Radiation Engineering as defined by Health Education England.

Features of the programme:

Educational Aims: 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 Learning Outcomes:

On successful completion of this programme graduates will achieve the following learning outcomes.

Knowledge and Understanding

- A1. Demonstrate an underpinning knowledge of engineering and biosciences that provides the foundations for study in the Clinical Engineering pathways of Healthcare Science.
- A2. Understand the context of healthcare sciences and their application to practical problems.
- A3. Understand a broad range of diagnostic measurement techniques including the rationale for the investigation.
- A4. Demonstrate competence in specific areas of medical engineering and laboratory measurement with an understanding of the principles underlying the techniques used.
- A5. Demonstrate an understanding of the research, development and innovation across the NHS and in healthcare science in particular.

Intellectual Skills

- B1. Actively question and seek relevant information.
- B2. Compare and contrast information from different sources online and offline.
- B3. Critically evaluate information against hypotheses in a range of research scenarios.
- B4. Actively analyse and apply problem-solving strategies
- B5. Demonstrate independent self-directed learning, and skills for life-long learning

Subject/Professional Practice Skills

- C1. Understand the importance of patient-centred care, evidence based practice, clinical audit and multidisciplinary team working.
- C2. Critically observe, analyse and evaluate information arising from a wide range of sources.
- C3. Apply practical approaches to the study of selective aspects of healthcare science and demonstrate an awareness of safety and good workplace practice.
- C4. Communicate effectively scientific data and concepts using a range of communication strategies.
- C5. Develop discipline-specific interests by specialising within the programme in relation to subject and/or career aspirations.
- C6. Obtain, record, collate and critically analyse data using appropriate practical techniques, working as an individual or within a group.
- C7. 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.

Transferable Skills and other attributes

- D1. Communicate information, advice, instruction and professional opinion to colleagues, patients, clients, users, their relatives and carers.
- D2. Critically analyse data arising from various means of engineering, biological or work-based inquiry.
- D3. Undertake active learning and development.
- D4. Apply information management skills to their learning and practice.
- D5. Work effectively as a team member.
- D6. Demonstrate an autonomous and reflective approach to lifelong learning.

Assessment strategy: The assessment strategy has been designed to test the programme learning outcomes.

Student support:

Part B: Programme Structure**Year 1**

The student must take 120 credits from the modules in Year 1.

Year 1 Compulsory Modules

The student must take 120 credits from the modules in Compulsory Modules.

Module Code	Module Title	Credit
USSJRN-45-1	Foundations of Engineering Science 2024-25	45
USSJQW-15-1	Foundations of Mathematics and Statistics 2024-25	15
USSJQX-15-1	Introduction to Professional Practice in Healthcare Science 2024-25	15
USSJS3-45-1	Life Science for Clinical Engineering 2024-25	45

Year 2

The student must take 120 credits from the modules in Year 2.

Year 2 Compulsory Modules

The student must take 120 credits from the modules in Compulsory Modules.

Module Code	Module Title	Credit
USSKLB-30-2	Advanced Clinical Engineering 2025-26	30
USSKLC-30-2	Applied Clinical Engineering 2025-26	30
USSJTC-30-2	Professional Aspects of Healthcare Science 2025-26	30
USSJT9-30-2	Scientific Practice 2025-26	30

Year 3

The student must take 120 credits from the modules in Year 3.

Year 3 Compulsory Modules

The student must take 120 credits from the modules in Compulsory Modules.

Module Code	Module Title	Credit
USSKLD-30-3	Advanced Radiation Engineering 2026-27	30
USSKLG-30-3	Applied Radiation and Rehabilitation Engineering 2026-27	30
USSJSJ-30-3	Healthcare Science Project 2026-27	30
USSKLM-30-3	Professional Healthcare Science Practice 2026-27	30

Part C: Higher Education Achievement Record (HEAR) Synopsis

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 D: External Reference Points and Benchmarks**Part E: Regulations**

Approved to University Regulations and Procedures.

No modules can be considered for condonation.

Aegrotat awards will not give eligibility for NSHCS accreditation.