



PROGRAMME SPECIFICATION

Part 1: Information	
Awarding Institution	University of The West of England
Teaching Institution	Bridgwater and Taunton College (BTC)
Delivery Location	National College for Nuclear
Study abroad / Exchange / Credit recognition	Not applicable
Faculty responsible for programme	Faculty of Environment and Technology
Department responsible for programme	Engineering, Design and Mathematics
Professional Statutory or Regulatory Body Links	Application for IET Accreditation to be sought.
Highest Award Title	FdSc Electromechanical Engineering (Nuclear)
Default Award Title	Not applicable
Interim/Progression Award Titles	Cert HE Electromechanical Engineering (Nuclear)
UWE Progression Route	Not applicable
Mode of Delivery	PT
ISIS code/s	H36A42
For implementation as part of an apprenticeship from	September 2018
Apprenticeship Standard and type	Not applicable
Main training provider	Bridgwater and Taunton College
UWE's role (if UWE is not the main training provider)	Quality Assurance
End Point Assessment Institution/Organisation	Not applicable
Additional training provider(s)	Not applicable

Part 2: Description

The FdSc Electromechanical Engineering (Nuclear) covers a range of disciplines namely; nuclear science, electromechanical systems, power generation and transmission, fluid dynamics and heat transfer, instrumentation and control and is designed to produce engineers that are able to make an immediate contribution to employment within the nuclear sector. The degree provides a direct entry route into level 6 of related undergraduate engineering degree programmes. The Foundation degree is part of a suite of programmes developed for the nuclear sector and has been requested as being available by employers.

The Foundation degree meets priorities identified in the UK Government Industrial Strategy (2018) for higher education and will be delivered at the National College for Nuclear located at Bridgwater and Taunton College, one of five National Colleges created by the UK Government. The National College for Nuclear has a mission to create a new generation of graduate nuclear engineers to satisfy the demand created by rapid technological advances in new nuclear builds, operation, decommissioning and defence. The curriculum and delivery model has been created in partnership with employers to provide a higher vocational pathway for the UK nuclear industry that satisfies the current and future demands of sector. A block week delivery model has been developed to provide access to work-based learners.

The delivery model is based upon an 'investigate and discover', project-based learning methodology, using industry-sponsored equipment and materials to produce outcomes that can then be mapped against professionally accredited engineering degree modules. Learners will benefit from the interpretation of ideas and the experience of practice, within the wider context of employment, where knowledge, understanding and skills are clearly integrated. Learners will develop a deep understanding of engineering principles, design, systems and applications that should enable successful progression both within employment and to level 6 qualifications in Engineering.

The curriculum is designed to integrate skills, knowledge and practice. For example, mathematical concepts and techniques are introduced and developed within the context of industry relevant scenarios across the curriculum. Students therefore experience the development of theoretical concepts across different levels and contexts as they progress through the programme.

Group work is used throughout to develop teamwork and collaboration and to support learning. A variety of assessment methods are used to ensure that students can demonstrate their knowledge and understanding and for assessors to be confident of the authenticity and standard of learning outcomes.

The specific aims are that the graduate shall:

- Have a broad knowledge and understanding of engineering theory, practices and applications in the field of nuclear engineering, electromechanical systems, instrumentation and control.
- Apply engineering design, systems and management concepts within the nuclear sector and have the basis for systems analysis within a nuclear engineering context;
- Demonstrate a capacity for innovative and creative design and be able to draw on knowledge of fundamental principles and proven systems to further develop solutions which meet required specifications;
- Demonstrate awareness and competence with respect to professional and safety requirements and be conversant with the regulatory framework that governs operations within the nuclear sector.
- Have developed the ability, interest and motivation to conduct independent study and keep abreast of future changes in technology and engineering practices.
- Shall have the academic underpinning to successfully progress to level 6 programmes in engineering
- Be able to communicate clearly, concisely and persuasively with individuals and groups, using a professional standard of English, both orally and in writing.
- Be able to provide solutions to today's industry problems that deepen the students' learning of applying engineering principles in a commercial setting.

Part 2: Description
Programme requirements for the purposes of the Higher Education Achievement Record (HEAR)
<p>The degree develops the knowledge, skills and capabilities required by the civil and defence nuclear industries for the specification, design and delivery of solutions to problems involving mechanical, electrical and electronic systems.</p> <p>Work-based learning is embedded in the programme designed to develop individuals who think and communicate effectively, who can conduct inquiry, solve problems, undertake critical analysis and deliver effective systems solutions.</p> <p>Graduates from this programme are able to be effective and make an early impact on their work environment both prior to and after graduation.</p>
Regulations
Approved to University Regulations and Procedures

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: Note only core modules are included in the mapping.														
Learning Outcomes:						UFMFRP-30-1	UFMFSP-30-1	UFMFTP-30-1	UFMFQP-30-1	UFMFVP-30-2	UFMFWP-30-2	UFMFYP-30-2	Total:	
Programme Aims	Have a broad knowledge and understanding of engineering theory, practices and applications in the field of nuclear engineering, heat transfer and power generation, electromechanical systems, instrumentation and control						X	X	X	X	X	X	X	7
	Apply engineering design, systems and management concepts within the nuclear sector and have the basis for systems analysis within an nuclear engineering context;						X			X	X	X	X	5
	Demonstrate a capacity for innovative and creative design and be able to draw on knowledge of fundamental principles and proven systems to further develop solutions which meet required specifications;						X		X	X	X	X		5
	Demonstrate awareness and competence with respect to professional and safety requirements and be conversant with the regulatory framework that governs operations within the nuclear sector.						X				X		X	3
	Have developed the ability, interest and motivation to conduct independent study and keep abreast of future changes in technology and engineering practices.									X		X	X	3

Part 3: Learning Outcomes of the Programme									
	Shall have the academic underpinning to successfully progress to level 6 programmes in engineering	X	X	X	X	X	X	X	7
	Be able to communicate clearly, concisely and persuasively with individuals and groups, using a professional standard of English, both orally and in writing.	X	X	X	X	X	X	X	7
	Be able to provide solutions to today's industry problems that deepen the students' learning of applying engineering principles in a commercial setting.	X			X		X	X	4
	Total Criteria Per Module:	7	3	4	7	6	7	7	

	Compulsory Modules	Optional Modules	Awards
Year 1	Nuclear Science, Materials, and Design UFMFRP-30-1	None	Interim award: CertHE Electromechanical Engineering
	Electromechanical Systems Engineering UFMFQP-30-1		
	Solid Mechanics UFMFSP-30-1		
	Thermofluidic Dynamics UFMFTP-30-1		
Year 2	Electromechanical Systems Analysis UFMFWP-30-2	<i>Students must select 30 credits from the following:</i> Electrical Supply and Machines UFMFUP-30-2 Heat Transfer Power and Environment UFMFXP-30-2	Interim award: CertHE Electromechanical Engineering
	Electromechanical Systems and Design UFMFVP-30-2		
Year 3	Advanced Nuclear Science and Project Management UFMFYP-30-2	None	Highest Award FdSc Electromechanical Engineering

Part 5: Entry Requirements

The University's Standard Entry Requirements apply.

The University accepts all nationally recognised advanced qualifications for entry to higher education, and gives equal consideration to academic and vocational qualifications for all programmes of study. The University may also take into consideration skills and expertise gained from work experience or vocational training.

- The degree apprenticeship standard requires GCSE: Grade 5 or above in English Language and Mathematics, or equivalent.
- A-level subjects: Chemistry, Physics or other Science subjects. Must include Mathematics at grade C or equivalent.
- EDEXCEL (BTEC) Diploma: Engineering and Technology related subjects, including Mathematics
- Access: Achievement of the Access to HE Diploma; including level 3 credits in Maths (algebra and calculus).
- Mature applicants with relevant experience who do not have the stated entry requirements are encouraged to apply.
- Tariff points as appropriate for the year of entry - up to date requirements are available through the [courses database](#)

Part 5: Entry Requirements**Part 6: Reference Points and Benchmarks**

Set out which reference points and benchmarks have been used in the design of the programme:

- QAA UK Quality Code for HE
 - Framework for higher education qualifications (FHEQ)
 - Qualification characteristics for Foundation degrees
- UWE Bristol 2020 Strategy document
- Guidance on how to meet the Learning Outcome requirements for Accreditation (IET Academic Accreditation)
- The IET Handbook of Learning Outcomes for BEng and MEng Programmes
- Nuclear Scientist and Nuclear Engineer Apprenticeship Standard as approved (Sept 2015).
<https://www.instituteforapprenticeships.org/apprenticeship-standards/nuclear-scientist-and-nuclear-engineer-degree/>

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Approval Date	Special UVP 5th July 2018			
Revision UVP Approval Date <i>Update this row each time a change goes to UVP</i>		Version	1	<i>Link to RIA</i>
Next Periodic Curriculum Review due date	<i>Academic year in which next Periodic Curriculum Review due (6 years from initial approval or last Periodic Curriculum Review)</i>			
Date of last Periodic Curriculum Review				