SECTION 1: KEY PROGRAMME DETAILS

This section provides students with key details about their programme.

PROGRAMME INFORMATION	
Final Award Title	BEng (Hons) Electronic Engineering (Nuclear)
Default Award Title (Exit Award)	N/A
Interim Award Titles (Exit Awards)	BEng Electronic Engineering (Nuclear)
Awarding Institution	UWE Bristol
Teaching Institutions	UWE Bristol
Partner Institutions	None
Delivery Locations	Frenchay Campus
Study Abroad / Exchange / Credit Recognition	N/A
Faculty Responsible For Programme	Environment and Technology
Department Responsible For Programme	Engineering, Design and Mathematics
Professional Statutory or Regulatory Body (PSRB) Links	Application to be made to IET
Apprenticeship	Level 6 Nuclear Scientist/Engineer standard ST0289
Mode of Delivery	PT
Entry Requirements	The University's Standard Entry Requirements Tariff points as appropriate for the year of entry - up to date requirements are available through the courses database.
For Implementation From	Implementation from September 2020
Programme Codes	FOR QUALITY ENHANCEMENT TEAM TO COMPLETE

PART B: FOR STUDENT AND ACADEMIC SERVICES COMPLETION ONLY	
First UVP Approval Date	**Date of first UVP approval**
Date of Last Revalidation (through Programme Enhancement Review)	**Dates of subsequent PERs and revalidations**
Next Programme Enhancement Review Date	**Academic year in which next Programme Enhancement Review due (6 years from initial approval or last PER)**

SECTION 2: PROGRAMME OVERVIEW, AIMS and LEARNING OUTCOMES

This section provides students with an overview of the programme, its aims and its learning outcomes. It sets out what prospective and registered students can expect to know, understand and be able to do on successful completion of the programme.
Please write this section in the first person, addressing your prospective students.

PART A: PROGRAMME OVERVIEW, AIMS and LEARNING OUTCOMES

1. (Programme) Overview (c. 400 words)

The curriculum is delivered as a level 6 top-up programme for degree apprenticeship students requiring an engineering education closely aligned to engineering practice with specific relevance to the nuclear sector. Students entering the programme will have successfully completed FdSc Mechatronics which guarantees accredited learning can be awarded to level 4 and level 5 modules. Technical knowledge, engineering practice, business awareness and sustainability are integrated through projects and revisited to produce confident graduates able to apply their skills to novel situations and create engineering solutions that benefit society. Specialist nuclear knowledge is provided at level 6. The inclusion of a 40 credit level 6 project is a requirement of the Nuclear Scientist/Engineer integrated degree apprenticeship standard and forms part of the end point assessment.

Professional development is placed at the heart of the curriculum. From day one, students are taken on a journey from student engineer to graduate engineer, preparing them for life as an engineering professional. Students will identify, develop and demonstrate competencies expected of a professional engineer in the workplace. Projects and activities, embedded throughout the curriculum, are designed to develop the engineering habits of mind such as: Problem-finding, Problem-solving, Visualising, Systems Thinking, Improving, and Adapting. Foundation principles of engineering science, skills and practice are integrated throughout all years of study.

The programme is designed to provide the balance of theoretical and practical understanding needed to meet the demands of the electronic engineering industry for engineering practitioners, and in particular to meet the requirements for professional accreditation in partial fulfilment of CEng. Furthermore, it caters for students with both industrial and/or academic backgrounds, to develop problem solving skills and be able to demonstrate leadership in a number of engineering settings.

The Electronic Engineering programme produces graduates with a wide range of expertise relevant to the electronics industry. Electronic engineers are employed throughout the engineering sector in the creation, maintenance and improvement of engineering operations. Consequently, Electronic engineering graduates need to be able to integrate engineering knowledge skills from across engineering and be able to be an effective member of a multidisciplinary team. The programme covers a broad range of disciplines such as digital and analogue circuit design, power electronics, control, signal processing and project management. A number of optional modules provide a deeper level of learning into more advanced and state of the art technologies. As we move closer to a more digitally connected network of systems and devices, this programme allows students to develop expertise particularly in system design, microprocessor hardware/software design and simulation and modeling techniques.

The ability to work in multidisciplinary teams on projects that require a broader view of the role of engineering in industry and society is developed through the core programme using project weeks to bring students together in problem finding and solution spaces where students are able to interact with each other, academics and external practitioners.

The integration of knowledge, skills and practice allows the tackling of real engineering challenges and encourage students to engage with the wider role that mechanical engineers and specifically engineering habits of mind can play in tackling global challenges. This is an accessible and modern engineering curriculum designed to attract students from diverse backgrounds able to see the future role of

PART A: PROGRAMME OVERVIEW, AIMS and LEARNING OUTCOMES

engineering in industry and society and is designed to meet the demands of employers and degree apprentices.

2. Educational Aims (c. 4-6 aims)

On successful completion of this programme students will

1. be able to work as a graduate electronics engineer across the engineering sector as an effective member of a multidisciplinary team.
2. have acquired the knowledge and understanding of scientific principles and methods necessary to underpin an education in engineering with specific reference to the nuclear sector.
3. be able to apply their engineering knowledge to develop and maintain complex engineering products and explore the environmental impact of engineering.
4. have demonstrated an ability to integrate knowledge and understanding of core subject material in order to solve a substantial range of engineering problems, including ones of a complex nature.
5. understand the competencies and social responsibilities of a professional engineer and be able to critically appraise the value and effectiveness of future engineering innovations in the field.
6. have the requisite academic knowledge, skills and preparation to study for higher degrees in appropriate engineering disciplines.

3. Programme Learning Outcomes (c. 6-8 outcomes)

Programme (Learning) Outcomes (POs)

No.	PO Text
PO1	Apply scientific and analytical methods to solve engineering problems involving design, evaluation and manufacture across electrical and electronic engineering applications including those that arise in the nuclear sector.
PO2	Use systems that incorporate digital hardware, algorithms, interfacing circuits and communication, sensing and actuating devices.
PO3	Design, model and build electronic engineering systems and be able to specify and assess technical designs.
PO4	Use a systems approach to establish rigorous solutions that are fit for purpose and consider all aspects of a problem including production, operation, maintenance and disposal
PO5	Demonstrate a critical awareness of manufacturing, financial and marketing implications of design proposals
PO6	Pursue independent study, undertake enquiry into novel and unfamiliar concepts and implement change in an engineering environment
PO7	Communicate and operate effectively, professionally and ethically either as individuals or as members of a team
PO8	Make considered judgements and decisions on complex engineering issues in which not all facts and consequences are accurately known

4. Programme (Learning) Outcomes (POs) Mapping

Programme Outcomes: Level 4 and 5 modules	Module No: UFMFKS-30-1 (core)	Module No: UFMFFT-15-1 (core)	Module No: UFMFGT-15-1 (core)	Module No: UFMFJT-30-1 (core)	Module No: UFMFHT-30-1 (core)	Module No: UFMFQS-15-2 (core)	Module No: UFMFRS-15-2 (core)	Module No: UFMFKA-30-2 (core)	Module No: UFMFMT-30-2 (core)	Module No: UFMFPT-15-2 (core)	Module No: UFMFQT-15-2 (core)
PO1:	x	x	x	x	x			x	x	x	x
PO2:				x	x			x	x	x	x
PO3:	x			x	x			x	x	x	x
PO4:	x	x		x		x		x	x	x	x
PO5:	x		x	x		x		x			
PO6:	x	x		x		x	x	x	x	x	x
PO7:	x	x	x	x	x	x		x	x	x	x
PO8:	x		x	x	x	x	x	x	x	x	x

4. Programme (Learning) Outcomes (POs) Mapping

Programme Outcomes: Level 6 Option numbering indicates mutually exclusive options	Module No: UFMFXL-40-3 (core)	Module No: UFMFYL-20-3 (core)	Module No: UFMFV8-15-3 (core)	Module No: UFMFNQ-15-3 (core)	Module No: UFMFST-30-3 (core)	Module No: UFMFW7-15-3 (core)	Module No: UFMFS7-15-3 (op)	Module No: UFMFVT-15-3 (op)	Module No: UFMFH8-15-3 (op)	Module No: UFMFST-30-3 (core)
PO1:	x	x			x	x	x	x	x	x
PO2:	x		x		x	x	x	x	x	x
PO3:	x				x	x	x	x	x	x
PO4:			x	x	x	x	x	x	x	x
PO5:	x									
PO6:	x		x	x	x	x	x	x	x	x
PO7:	x	x	x	x	x	x	x	x	x	x
PO8:	x	x	x		x	x	x	x	x	x

PART B: PROGRAMME STRUCTURE

Structure (part-time)

This structure diagram demonstrates the student journey from entry through to Graduation for a typical **part-time student** including:

- level and credit requirements
- interim award titles
- compulsory and optional modules

Accredited Learning: Students entering this award will have successfully achieved the UWE FdSc Mechatronics Engineering. Consequently, Accredited Learning credit is awarded for 240 credits at level 4 and level 5 listed below for the awarding of credit against this programme.

Level 4: 120 credits

Module Code	Module Title	Level	Credit
UFMFKS-30-1	Engineering Practice 1	4	30
UFMFHT-30-1	Applied Electronics	4	30
UFMFJT-30-1	Principles of Electrical Engineering	4	30
UFMFFT-15-1	Mathematical Modelling for Electronics and Robotics	4	15
UFMFGT-15-1	Programming for Engineers	4	15

Year 5: 120 credits

Module Code	Module title	Level	Credit
UFMFQS-15-2	Engineering Practice 2	5	15
UFMFRS-15-2	Engineering Research	5	15
UFMFKA-30-2	Microcontroller Applications Group Lab	5	30
UFMFMT-30-2	Signals and Systems	5	30
UFMFPT-15-2	Analogue Electronic Systems	5	15
UFMFQT-15-2	Digital System Design	5	15

Year: 1.1

Interim award: BEng Electronic Engineering (Nuclear) requires 300 credits at the appropriate level. Please refer to UWE Academic Regulations for details.

Compulsory modules

Module Code	Module title	Level	Credit
UFMFW7-15-3	Control Systems Design	6	15
UFMFST-30-3	Power Electronics and Energy Systems	6	30
UFMFNQ-15-3	Professionalism for Engineers	6	15

Year: 1.2

Interim award: BEng Electronic Engineering (Nuclear) requires 300 credits at the appropriate level. Please refer to UWE Academic Regulations for details.

Compulsory modules

Module Code	Module title	Level	Credit
UFMFXL-40-3	Nuclear Apprenticeship Project	6	40
UFMYL-20-3	Nuclear Knowledge	6	20

PART C: HIGHER EDUCATION ACHIEVEMENT RECORD (HEAR) SYNOPSIS

Graduates of this programme will be equipped with a broad understanding of electronic analysis and design, combined with knowledge of engineering practice, information technology and project management.

The programme produces graduates with a broad-based 'systems' approach to engineering problem solving. Graduates from this programme will be equipped to work in multi-disciplinary teams, able to critically appraise existing ideas and practice and produce creative solutions to engineering problems related to the nuclear engineering sector.

PART D: EXTERNAL 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)
- Subject benchmark statement for Higher Education qualifications in engineering (October 2019)
- Strategy 2030
- University policies
- Staff research projects
- Relevant PSRB requirements: AHEP3
- Industrial Advisory Board
- Level 6 Degree Apprenticeship Standard: Nuclear Scientist/Engineer

PART E: REGULATIONS

B: Approved variant to University Academic Regulations and Procedures

The Institution for Engineering and Technology accreditation requirements:

- All level 5 and 6 credits are considered when calculating the Degree classification.

The degree classification for the 360 credit honours degrees BEng (Hons) Electrical and Electronic Engineering, BEng (Hons) Electronic Engineering, BEng (Hons) Robotics and BEng (Hons) Electronics and Computer Engineering (or 480 credit honours degree with an integrated foundation year) is based upon all the marks achieved at level 5 and all the marks achieved at level 6. Marks achieved for level 6 credits are weighted three times the value of the marks for the level 5 credits (Paper AB16/05/07).

Condoned Credit
From September 2020 intake onwards to comply with conditions set out by Engineering Council UK we will only be able to condone a maximum of 30 credits across the whole programme.