University of Sheffield

Programme Specification

This specification provides a 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 they take full advantage of the learning opportunities that are provided.

The content of our courses is reviewed annually to make sure it's up-to-date and relevant. Individual modules are occasionally updated or withdrawn. This is in response to discoveries through our world-leading research; funding changes; professional accreditation requirements; student or employer feedback; outcomes of reviews; and variations in staff or student numbers. In the event of any change we will inform students and take reasonable steps to minimise disruption.

Programme Details

1. Programme title	Electrical and Electronic Engineering		
2. Award type	Master of Engineering		
3. Programme details	**FHEQ Level:** 7	**Mode of Study:** Full time Full time	**Duration:** 4 years 5 years (Foundation)
4. Faculty	Faculty of Engineering		
5. School	**Owning:** School of Electrical and Electronic Engineering		
6. Accrediting Professional or Statutory Body	Institution of Engineering (IET)		
7. HECoS code *Select between one and three codes from the HECoS vocabulary.*	**Code:** 100163 **Percentage:** 100	**Code:** **Percentage:**	**Code:** **Percentage:**
Programme code (internal use)	ELEU010 (Full time) ELEU026 (Foundation)		

9. Programme aims

The programme aims to:	
A1	Enable students to develop a thorough knowledge and understanding of electrical and electronic science and its engineering applications.
A2	Provide students with the educational base needed to become a Chartered Engineer.
A3	Foster in students a commitment to self-improvement and continuing professional development.
A4	Give students the opportunity to study particular aspects of electronic and electrical engineering in depth, according to their interests.
A5	Help students develop a range of presentational and interpersonal skills appropriate to employment in the engineering sector and elsewhere.
A6	Encourage in students independence of thought and a critical approach to the interpretation of experimental evidence and to the evaluation of existing information.

10. Programme learning outcomes

Knowledge and understanding (K) On successful completion of the programme, students will be able to demonstrate knowledge and understanding of:	
K1	The fundamental principles of engineering science relevant to electrical and electronic engineering.
K2	The mathematics necessary to predict the behaviour of electrical and related systems.
K3	Analytical and design methods and tools appropriate for electronic and related systems.
K4	The principles underlying engineering management, interpersonal interactions in a group working context and the legal and ethical responsibilities of a professional engineer.
K5	Specialist knowledge of their chosen specialism, sufficient to allow further study or to undertake an industrial career.
Skills and other attributes (S) *When considering the skills and attributes developed in this programme, please refer to the Sheffield Graduate attributes (SGAs). SGAs can be found here* On successful completion of the programme, students will be able to:	
S1	Gather, organise and critically evaluate information needed to formulate and solve problems.
S2	Use a systems approach to apply acquired engineering knowledge to the solution of open-ended problems.
S3	Interpret the results of experimental investigations, recognising the limitations of the techniques involved.
S4	Design and execute experiments to investigate component, circuit or system behaviour.

S5	Use computer-aided engineering for design and analysis.
S6	Communicate technical and non-technical content effectively using spoken, written and visual communication appropriate for the audience.
S7	Write computer programs or develop computer systems to solve engineering problems.
S8	Work independently and in groups to solve open-ended problems possessing many valid solutions.
S9	Evaluate the impacts of engineering on the environment and society, adopting an ethical, sustainable and equitable approach.

11. Learning and teaching methods *(this should include a summary of methods used throughout the programme, including any unique features and should be written with a student focus as this information will display to current students and applicants i.e. prospectus)*

Lectures - used to transmit information, explain theories and concepts, and illustrate methods of analysis or design. For most lecture courses, tutorial sheets and tutorial sessions are provided to enable students to develop their understanding during private study.

Practical laboratory activities - working in groups, students undertake laboratory experiments and small design projects to gain practical skills.

Design projects - working in small groups, students tackle highly scaffolded engineering projects in the early years of their degree to develop their project-management and practical skills in preparation for their extended projects and industry.

Personal academic tutorials - small groups discuss both technical and transferable skill based material. Students are encouraged to take an active part in discussions.

Large-group academic tutorials - run for the whole class to help students to resolve difficulties as they work through the problem sheets.

Individual extended project - a major study, carried out over two semesters, involving a significant research component. It is supervised by a member of the academic staff and allows the student to display initiative, originality and creativity.

Group extended project - small teams students tackle a realistic engineering design project. The projects develop a wide range of skills, including team-working and presentation skills.

Industrial placement (**where selected**) – professional experience gained during an extended work placement within an engineering environment.

12. Assessment and feedback methods *(this should include the range of types of methods used and should be written with a student focus as this information will display to current students and applicants i.e. prospectus)*

Written examinations - used for examinations of taught modules.

Coursework submissions - these include formal laboratory reports, programming assignments and ~~tutorial~~ assignments.

Oral presentations - oral presentation is used as one of the methods of assessment in all years of the course.

Individual and group project reports - written reports prepared individually (for individual projects) or as a team (for group projects).

Demonstration of hardware - used primarily at levels 1 and 2 to encourage focus and feedback on hardware.

Version Number:	Purpose / Change:	Cohort affected: (academic year and level)	Date change approved:
1			December 2020
2	Programme Simplification	25/26 - Foundation 26/27 - Year 1	June 2025

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