

Programme Specification

Awarding body:	University of Surrey	
Teaching institution (if different):	University Centre Farnborough, Farnborough College of Technology	
Final award:	BEng (Hons)	
Final award (if different):		
Programme/pathway title:	BEng (Hons) Engineering (Electronic & Electrical) (Top-up)	
Subsidiary award(s) and title(s):	Award	Title
	BEng (Ord)	Engineering (Electronic & Electrical) (Top-up)
FHEQ Level:	Level 6	
Credits:	120	
ECTS credits:	60	
Name of Professional, Statutory or Regulatory Body (PSRB):	TBC	
Mode of study and route code:	Mode of study	Please tick applicable
	Full-time	<input type="checkbox"/>
	Full-time with PTY	<input type="checkbox"/>
	Part-time	<input checked="" type="checkbox"/>
	Distance learning	<input type="checkbox"/>
	Short course	<input type="checkbox"/>
JACs code:	TBC	
HESCOs Code:	N/A	
Start date (date/month/year):	01/09/2020	
End date (date/month/year):	02/07/2021	
Length of programme in months:	10	

QAA Subject benchmark statement (if applicable):	Engineering (October 2019)									
Other internal and / or external reference points:	The Accreditation of Higher Education Programmes: UK Standard for Professional Engineering Competence (3 rd Edition, May 2014) UK-SPEC: UK Standard for Professional Engineering Competence (3 rd Edition, January 2014)									
Faculty and Department/School:	Faculty of Construction & Engineering									
Programme Leader:	Scott Hutton									
Date of production/revision of the specification:	06/04/2020									
Educational aims of the programme:										
<ul style="list-style-type: none"> • To produce graduates with the knowledge, understanding and skills required for a successful career within the electronic and electrical engineering industry or to prepare them for further higher-level study. • To provide knowledge and understanding of the underlying concepts and principles of mathematics, science and engineering, with particular reference to electronic and electrical engineering, and the ability to apply these in order to analyse issues and develop innovative solutions to advanced electronic and electrical engineering problems. • To deliver the technical skills and engineering competence required to understand, design, develop, operate and maintain a range of electronic and electrical systems. • To provide students with the ability to use relevant workshop and laboratory tools and equipment and have experience of using relevant software packages to perform engineering tasks. • To equip students with general transferable skills including the management of their own time and resources, effective planning skills, the ability to manage their own personal development in the context of their career and life-long learning, team working, communication (written and oral), project management skills, numerical and IT competencies, as well critical evaluation as appropriate to an engineering professional. • To provide awareness of current practice associated with the management and sustainability of engineering projects in industry, in addition to an understanding of the impact of engineering activity on society and the environment. • To be able to undertake research, analyse and evaluate data, critically understand the limitations of the data, make deductions and present findings. • To be able to manage engineering projects and to work both independently and collaboratively in multi-discipline teams, demonstrating decision making ability and leadership skills. 										
Programme learning outcomes:										
The programme provides opportunities for students to develop and demonstrate knowledge and understanding, skills, qualities and other attributes in the following areas (K – subject knowledge; C – cognitive/analytical; P – professional/practical skills; T – transferable skills):										
Learning Outcome	K	C	P	T	Optional Ref	Cert HE / PG Cert N/A	Dip HE / PG Dip N/A	BSc / BA (Ord)	BA / BSc (Hons)	

T1. To be able to communicate effectively in both written formats and oral presentations.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>		<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
T2. To be able to demonstrate the use of evidence and logical thought in the communication and presentation of ideas.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>		<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
T3. To be able to use computers and IT tools effectively.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>		<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
T4. To be able to retrieve information from written and electronic sources.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>		<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
T5. To be able to apply critical evaluation skills.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>		<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
T6. To be able to evaluate and present quantitative data effectively.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>		<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
T7. To be able to work effectively in a team, collaborate with others and demonstrate leadership skills.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>		<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
T8. To be able to manage their own time and resources.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>		<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
T9. To be able to construct, review and update plans in evolving circumstances.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>		<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
T10. To be able to reflect on their own learning and performance and take responsibility for their own continued professional development and life-long learning.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>		<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
P1. To be able to demonstrate competence in using workshop equipment to manufacture components and systems.	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>		<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
P2. To be able to demonstrate effective use of technical literature, including data sheets.	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>		<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
P3. To be able to demonstrate competence in the use of CAD/CAM systems.	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>		<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
P4. To be able to demonstrate competence in the use of test facilities to verify electronic and electrical engineering principles.	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>		<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
P5. To be able to apply relevant computer-based models and computer software packages to solve problems in electronic and electrical engineering.	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>		<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
K1. Underpinning mathematical and computer methods relevant to electronic and electrical engineering.	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>		<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
K2. Underpinning scientific principles and methodologies applicable to electronic and electrical engineering and the wider field of engineering.	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>		<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
K3. A range of engineering design processes.	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>		<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

K4. A range of engineering materials.	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>		<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
K5. Project management techniques.	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>		<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
K6. Advanced processes of design, manufacture and evaluation.	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>		<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
K7. Health and Safety, environmental, ethical and sustainability considerations.	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>		<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
K8. The utilization and interpretation of knowledge from other disciplines applied to the specialism of electronic and electrical engineering.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>		<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
C1. Select and apply appropriate mathematical and electronic and electrical engineering principles.	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>		<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
C2. Devise solutions to complex electronic and electrical engineering problems using appropriate quantitative and computer simulation techniques.	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>		<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
C3. Analyse the performance of systems and components through modelling methods.	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>		<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
C4. Synthesise a technical specification from a design brief.	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>		<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
C5. Demonstrate creative and innovative skills in design formulation and critically evaluate design outcomes.	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>		<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
C6. Work with technical uncertainty and appraise the validity of experimental results.	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>		<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
C7. Plan and manage engineering projects.	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>		<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Programme structure:									
<p>The BEng (Hons) Engineering (Electronic & Electrical) (Top-up) programme will be studied part-time over 2 academic years and conforms to the University of Surrey Regulations regarding programme structure. The programme is modular comprising of one 45 credit module and five 15 credit modules at Level 6. Taught modules worth 15 credits are indicative of 150 hours of learning, comprising of student contact, private study and assessment. The BEng (Hons) award requires the successful completion of 120 credits at Level 6. All modules are compulsory and the <i>Major Project</i> module must be specific to pathway. The exit award of BEng (Ord) Engineering (Electronic & Electrical) (Top-up) may be achieved on the successful completion of 60 credits at Level 6.</p>									
Programme adjustments (if applicable):									
N/A									
FHEQ Level 6: Potential awards – BEng (Hons) Engineering (Electronic & Electrical) (Top-up) / BEng (Ord) Engineering (Electronic & Electrical) (Top-up)									

Module code	Module title	Core / compulsory / optional	Credits	Period (Semester 1, Semester 2, Year Long or Across Academic Years)	Qualifying Conditions
ENC6001	Major Project	Compulsory	45	Year Long	Entry requirements
ENC6002	Management & Leadership	Compulsory	15	Semester 1	Entry requirements
ENC6003	Project Management for Engineering	Compulsory	15	Year Long	Entry requirements
ENC6004	Quality Management in Engineering	Compulsory	15	Semester 2	Entry requirements
ENE6009	Digital Signal Processing	Compulsory	15	Semester 1	Entry requirements
ENE6010	Digital Communications in Engineering	Compulsory	15	Semester 2	Entry requirements
How many optional modules must a student choose in order to achieve the necessary amount of credits to achieve this level?		N/A			
Opportunities for placements / work-related learning / collaborative activity – please indicate if any of the following apply to your programme					
Associate Tutor(s)/Guest Speakers/Visiting Academics:			<input checked="" type="checkbox"/>		
Professional Training Year (PTY):			<input type="checkbox"/>		
Placement(s) (study or work that are not part of the PTY or Erasmus Scheme):			<input type="checkbox"/>		
Clinical Placement(s) (that are not part of the PTY Scheme):			<input type="checkbox"/>		
ERASMUS Study (that is not taken during Level P):			<input type="checkbox"/>		
Study exchange(s) (that are not part of the ERASMUS Scheme):			<input type="checkbox"/>		
Dual degree:			<input type="checkbox"/>		
Programme set up questions					
Source of funding for the programme (eg NHS where not student/employer funded):			N/A		
Collaborating organisation (eg NHS providing significant input into a programme):			N/A		
Location of study (eg if distance learning / overseas centre):			N/A		
Registered body (where the award is to be mandatory regulated by HCPC, RCVS or NMC etc – not optionally regulated eg accreditation/registration is an option):			N/A		

Closed programme (is the programme specifically to be offered privately to a group of students, eg only employees of companies or organisations that are meeting the costs of the students studies):	N/A
Other Information:	
Quality assurance:	
The <i>Regulations and Codes of Practice</i> for taught programmes can be found at: http://www.surrey.ac.uk/quality_enhancement/index.htm	