Programme Specification

Awarding body:	University of Surrey					
Teaching institution (if different):	University Centre Farnborough, Farnborough College of Technology					
Final award:	BEng (Hons)					
Programme title:	Engineering (Electrical and Electronics) (FHEQ Level 6)					
Subsidiary award(s) and title(s):	Award	Title				
	BEng (Ord)	Engineering (Electrical and Electronics)				
FHEQ Level:	Level 6					
Credits:	*120*					
ECTS credits:	60					
Name of Professional, Statutory or Regulatory Body (PSRB):	*(to be confirmed)* Institution of Engineering and Technology					
Mode of study / start and end date / duration:		Yes/No	Start month(s) (Feb, Sept or Feb and Sept) e.g., 13.09.2024	End month(s) (Feb, Sept or Feb and Sept) e.g., 12.09.2025	Duration (months)[1]	Structured or unstructured*
	Full - Time	Yes	Sept	July	10	Structured
	Part - Time	Yes	Sept	July	20	Structured
	Full - Time (Distance Learning) (PGT)	No				
	Part-Time Distance Learning (PGT)	No				
	UG Full time with PTY	No				
	PGT Full time with professional postgraduate year / professional training year / Placement / Study Abroad etc	No				
	Foundation Year	No				

[1] If your programme has a placement. What is the duration of the placement, i.e., no. of weeks. Is the placement integral to the course, i.e., can the student get the award without sitting the placement.

	Integrated masters (4 years)	No				
	Integrated masters (5 years with PTY)	No				
Length of programme in months:	10/20 Full Time/Part Time					
QAA Subject benchmark statement (if applicable):	Engineering (March 2023)					
Other internal and/or external reference points:	The Accreditation of Higher Education Programmes (AHEP) Fourth edition (August 2020) The Framework for Higher Education Qualifications of UK Degree -Awarding Bodies (2nd edition, February 2024) UK Standard for Professional Engineering Competence (3rd Edition, May 2014) The UK Standard for Professional Engineering Competence and Commitment (Fourth edition, August 2020) University of Surrey: Regulations for Taught programmes (Section A1)					
Faculty and Department/School:	Faculty of Construction and Engineering					
Programme Leader:	Scott Hutton					

Educational aims of the programme:
To equip graduates with integrated knowledge, skills and judgment to enable them to begin or develop through a professional career in the engineering sectors
To prepare graduate to apply systems thinking to engineering products and processes, to enable them to unpick and predict system level interactions beyond technical considerations, encompassing economic, legal, social environmental and ethical considerations
To offer students a significant exposure to practical work, including hands on laboratory and project work (experiential learning)
To provide sufficient opportunities to develop mathematic and scientific literacies relevant to their discipline or specialisation and to acquire and enhance digital skills reflecting the current societal needs.
To develop the ability of students to be autonomous, self-directed learners through a balance of individual and facilitated group work, teamwork and leadership at the right level
To encourage and nurture innovation, critical thinking and independent judgement required within rapidly evolving sector developments
To enable learners to manage compromise through uncertainty and competing factors by handling progressively more complex scenarios with conflicting, or missing information
To enable learners to use critical reasoning to make rational, effective and justified decisions that enable them to evaluate lifecycle and environmental impacts of engineering decision
To promote a student-centred focus in teaching and learning that promote equality, diversity and inclusion and support collaboration and self-reflection and understanding of others
To enable graduates to have an appreciation of professional and commercial engineering practice, ethics and global social responsibility

Programme learning outcomes:

	K	C	P	T	Optional Ref	BA / BEng / BSc (Hons) / MEng / MBA / MA / MSc Etc.	BSc / BA /BEng (Ord)	Dip HE / PG Dip	Cert HE / PG Cert
To demonstrate acquisition and application of the knowledge of mathematics, statistics and engineering principles to problems as informed by current developments in their chosen pathway	☒	☒	☐	☐	B1	☒	☒	☐	☐

To select and apply computational and analytical techniques to model problems and evaluate sources of information to address problems	☐	☒	☒	☒	B3, B4	☒	☒	☐	☐
To design solutions that meet a combination of societal, user, business and customer needs and apply an integrated or systems approach to problem solving	☐	☒	☒	☒	B5, B6	☒	☐	☐	☐
To be able to critically evaluate arguments, assumptions and data and identify appropriate solutions to engineering problems	☐	☒	☐	☒		☒	☐	☐	☐
To be able to communicate information, ideas, problems and solutions to both specialist and non-specialist audiences	☒	☐	☐	☒	B17	☒	☒	☐	☐
To be able to identify and analyse ethical concerns and use risk management processes associated with projects or engineering activities	☐	☐	☒	☒	B8, B9	☒	☒	☐	☐
To maintain and manage applications of current technology and undertake engineering design, development, manufacture and operation.	☐	☒	☒	☐		☒	☒	☐	☐
To demonstrate personal commitment to professional standards, recognising obligations to society, the profession and the environment.	☒	☐	☒	☒	E1, E2, E3	☒	☒	☐	☐
To be able to function as an individual or team member effectively selecting and applying engineering and project management principles, technologies and processes while appreciating the need for equality, diversity and inclusion	☐	☐	☒	☒	B11, B13, B16	☒	☒	☐	☐

FHEQ Level 6: Potential awards – BEng (Hons) Engineering (Aeronautical) (Electrical and Electronics) (Mechanical) / BEng (Ord) Engineering (Aeronautical) (Electrical and Electronics) (Mechanical)

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	Pass/fail with 40%
ENC6002	Quality Management & Leadership	Compulsory	15	Semester 1	Pass/fail with 40%
ENC6003	UAV Group Design Project	Compulsory	15	Semester 1	Pass/fail with 40%
ENE6010	Electronic Design & Embedded Systems	Compulsory	15	Semester 2	Pass/fail with 40%
ENE6011	Digital Signal Processing	Compulsory	15	Semester 1	Pass/fail with 40%
ENE6012	Digital & Analogue Communications	Compulsory	15	Semester 2	Pass/fail with 40%
How many optional modules must a student choose in each semester to achieve the necessary number of credits to achieve this level?		N/A			

Other Information:

The school of Engineering is committed to developing graduates with strengths in Employability, Digital Capabilities, Global and Cultural Capabilities, Sustainability, and Resourcefulness and Resilience. This programme is designed to allow students to develop knowledge, skills, and capabilities in the following areas:

Digital capabilities:

- Advanced understanding of discipline-specific digital tools (e.g. CAD/CAE, MATLAB, simulation software)
- Application of digital tools to model, simulate, analyse, and optimise engineering systems
- Data acquisition, processing, visualisation, and interpretation
- Integration of hardware and software in complex engineering solutions
- Major individual or group design projects
- Advanced digital laboratory assignments using industry-standard software

Employability:

- Understanding of professional engineering roles, standards, and codes of practice
- Awareness of project lifecycles, quality assurance, risk management, and commercial constraints
- Knowledge of career pathways and professional accreditation routes
- Professional communication (technical reports, presentations, design reviews)
- Teamwork, leadership, and interdisciplinary collaboration
- Time management, prioritisation, and project planning
- Problem-solving under realistic constraints
- Ability to operate effectively in professional engineering environments
- Self-reflection on strengths, skills gaps, and team dynamics and quality processes at the workplace (for apprentices)

Global and cultural capabilities:

- Awareness of global engineering challenges and international standards
- Understanding of cultural, social, and economic contexts influencing engineering solutions (e.g. Individual/ Group Design and Quality Management & Leadership modules)
- Cross-cultural communication and collaboration
- Consideration of societal impacts in engineering design
- Working effectively in diverse teams (e.g. UAV Group Design Project)
- Case studies addressing global engineering problems
- Opportunities for international collaboration or exchange (virtual or physical – e.g. Hochtaunusschule, Oberursel, Germany)

Resourcefulness and Resilience:

- Understanding of uncertainty, risk, and failure in engineering projects
- Knowledge of self-management and reflective practices
- Independent research and self-directed learning
- Critical thinking and decision-making with incomplete information
- Coping with setbacks, feedback, and time pressures
- Reflective learning and continuous self-improvement

Sustainability:

- Principles of sustainable engineering, life-cycle assessment, and systems thinking - Environmental, social, and economic dimensions of sustainability - Evaluation of environmental and social impacts of engineering solutions - Application of sustainable design principles and materials selection	
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:	☒
Professional Training Year (PTY):	☐
Placement(s) (study or work that are not part of the PTY):	☐
Clinical Placement(s) (that are not part of the PTY Scheme):	☐
Study exchange(s):	☐
Dual degree:	☐
Programme set up questions	
Source of funding for the programme (e.g., NHS where not student/employer funded):	NA
Collaborating organisation (e.g., NHS providing significant input into a programme):	NA
Location of study (e.g., if distance learning/overseas centre):	NA
Registered body (where the award is to be mandatory regulated by HCPC, RCVS or NMC etc – not optionally regulated e.g., accreditation/registration is an option):	NA
Closed programme (is the programme specifically to be offered privately to a group of students, e.g., only employees of companies or organisations that are meeting the costs of the students' studies):	NA