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 (Mechanical) (Top-up)	
Subsidiary award(s) and title(s):	Award	Title
	BEng (Ord)	Engineering (Mechanical) (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	☐
	Full-time with PTY	☐
	Part-time	☒
	Distance learning	☐
	Short course	☐
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 (3rd Edition, May 2014) UK-SPEC: UK Standard for Professional Engineering Competence (3rd 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:

- To produce graduates with the knowledge, understanding and skills required for a successful career within the mechanical 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 mechanical engineering, and the ability to apply these in order to analyse issues and develop innovative solutions to advanced mechanical engineering problems.
- To deliver the technical skills and engineering competence required to understand, design, develop, operate and maintain a range of mechanical 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.	☐	☐	☐	☒		☐	☐	☐	☐
T2. To be able to demonstrate the use of evidence and logical thought in the communication and presentation of ideas.	☐	☐	☐	☒		☐	☐	☐	☐
T3. To be able to use computers and IT tools effectively.	☐	☐	☐	☒		☐	☐	☐	☐
T4. To be able to retrieve information from written and electronic sources.	☐	☐	☐	☒		☐	☐	☐	☐
T5. To be able to apply critical evaluation skills.	☐	☐	☐	☒		☐	☐	☐	☐
T6. To be able to evaluate and present quantitative data effectively.	☐	☐	☐	☒		☐	☐	☐	☐
T7. To be able to work effectively in a team, collaborate with others and demonstrate leadership skills.	☐	☐	☐	☒		☐	☐	☐	☐
T8. To be able to manage their own time and resources.	☐	☐	☐	☒		☐	☐	☐	☐
T9. To be able to construct, review and update plans in evolving circumstances.	☐	☐	☐	☒		☐	☐	☐	☐
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.	☐	☐	☐	☒		☐	☐	☐	☐
P1. To be able to demonstrate competence in using workshop equipment to manufacture components and systems.	☐	☐	☒	☐		☐	☐	☐	☐
P2. To be able to demonstrate effective use of technical literature, including data sheets.	☐	☐	☒	☐		☐	☐	☐	☐
P3. To be able to demonstrate competence in the use of CAD/CAM systems.	☐	☐	☒	☐		☐	☐	☐	☐
P4. To be able to demonstrate competence in the use of test facilities to verify mechanical engineering principles.	☐	☐	☒	☐		☐	☐	☐	☐
P5. To be able to apply relevant computer-based models and computer software packages to solve problems in mechanical engineering.	☐	☐	☒	☐		☐	☐	☐	☐
K1. Underpinning mathematical and computer methods relevant to mechanical engineering.	☒	☐	☐	☐		☐	☐	☐	☐
K2. Underpinning scientific principles and methodologies applicable to mechanical engineering and the wider field of engineering.	☒	☐	☐	☐		☐	☐	☐	☐
K3. A range of engineering design processes.	☒	☐	☐	☐		☐	☐	☐	☐

K4. A range of engineering materials.	☒	☐	☐	☐		☐	☐	☐	☐
K5. Project management techniques.	☒	☐	☐	☐		☐	☐	☐	☐
K6. Advanced processes of design, manufacture and evaluation.	☒	☐	☐	☐		☐	☐	☐	☐
K7. Health and Safety, environmental, ethical and sustainability considerations.	☒	☐	☐	☐		☐	☐	☐	☐
K8. The utilization and interpretation of knowledge from other disciplines applied to the specialism of mechanical engineering.	☐	☐	☐	☐		☐	☐	☐	☐
C1. Select and apply appropriate mathematical and mechanical engineering principles.	☐	☒	☐	☐		☐	☐	☐	☐
C2. Devise solutions to complex mechanical engineering problems using appropriate quantitative and computer simulation techniques.	☐	☒	☐	☐		☐	☐	☐	☐
C3. Analyse the performance of systems and components through modelling methods.	☐	☒	☐	☐		☐	☐	☐	☐
C4. Synthesise a technical specification from a design brief.	☐	☒	☐	☐		☐	☐	☐	☐
C5. Demonstrate creative and innovative sills in design formulation and critically evaluate design outcomes.	☐	☒	☐	☐		☐	☐	☐	☐
C6. Work with technical uncertainty and appraise the validity of experimental results.	☐	☒	☐	☐		☐	☐	☐	☐
C7. Plan and manage engineering projects.	☐	☒	☐	☐		☐	☐	☐	☐

Programme structure:

The BEng (Hons) Engineering (Mechanical) (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 *Major Project* module must be specific to pathway. The exit award of BEng (Ord) Engineering (Mechanical) (Top-up) may be achieved on the successful completion of 60 credits at Level 6.

Programme adjustments (if applicable):

N/A

FHEQ Level 6: Potential awards – BEng (Hons) Engineering (Mechanical) (Top-up) / BEng (Ord) Engineering (Mechanical) (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
ENM6007	Mechanical Engineering Design	Compulsory	15	Semester 1	Entry requirements
ENM6008	Advanced Materials	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:	☒
Professional Training Year (PTY):	☐
Placement(s) (study or work that are not part of the PTY or Erasmus Scheme):	☐
Clinical Placement(s) (that are not part of the PTY Scheme):	☐
ERASMUS Study (that is not taken during Level P):	☐
Study exchange(s) (that are not part of the ERASMUS Scheme):	☐
Dual degree:	☐
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 *Regulations* and *Codes of Practice* for taught programmes can be found at: http://www.surrey.ac.uk/quality_enhancement/index.htm