

DEFINITIVE COURSE RECORD

Course Title	BEng (Hons) Operations Engineering [progression route]
Awarding Bodies	University of Suffolk
Level of Award ¹	FHEQ Level 6
Professional, Statutory and Regulatory Bodies Recognition	None
Credit Structure ²	360 Credits Level 6: 120 Credits Plus advanced standing of 240 credits at levels 4 and 5
Mode of Attendance	Full-time and Part-time
Standard Length of Course ³	1 year full-time
Intended Award	BEng (Hons) Operations Engineering
Named Exit Awards	None
Entry Requirements ⁴	Typical Offer: Foundation Degree (or equivalent) of 240 credits
Delivering Institution(s)	University of Suffolk at East Coast College (Lowestoft)
UCAS Code	H191

This definitive record sets out the essential features and characteristics of the BEng (Hons) Operations Engineering [progression route] course. The information provided is accurate for students entering level 4 in the 2017-18 academic year⁵.

Course Summary

For students that successfully complete the Foundation Degree in Operations Engineering there is the option to progress to the BEng (Hons) Operations Engineering. This progression route can be offered to students with 120 credits at Level 5 (in a suitable Engineering discipline) which opens entry to those with a suitable HND. The progression route will allow students to complete a further 120 credits at Level 6 that include a self-directed dissertation in the final year. The BEng progression route is studied one day per week for part-time students and two days for full-time. This course will require students to study in depth topics within disciplines such as Electrical and Electronic Power and Drives, Mechanical Design and Turbomachinery. Students will be expected to carry out in depth research to critically analyse engineering systems in both the electrical and mechanical engineering disciplines. The course will culminate in the students expanding on the skills and knowledge learned on the course to research and write a final dissertation project in an area of interest

¹ For an explanation of the levels of higher education study, see the [QAA Frameworks for Higher Education Qualifications of UK Degree-Awarding Bodies \(2014\)](#)

² All academic credit awarded as a result of study at the University adheres to the [Higher education credit framework for England](#).

³ Where the course is delivered both full-time and part-time, the standard length of course is provided for the full-time mode of attendance only. The length of the part-time course is variable and dependent upon the intensity of study. Further information about mode of study and maximum registration periods can be found in the [Framework and Regulations for Undergraduate Awards](#).

⁴ Details of standard entry requirements can be found in the [Admissions Policy](#)

⁵ The University reserves the right to make changes to course content, structure, teaching and assessment as outlined in the [Admissions Policy](#).

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Course Aims

- Produce graduate engineers equipped to play leading roles as designers and engineers, using modern technologies
- Widen participation in higher education within the local region
- Provide learners with the necessary skills base and knowledge required to undertake a career as a graduate engineer in the industries related to operations engineering
- Develop learner competence in applying computer software and computer based systems to the design of engineering processes and analysis of engineering design problems
- Develop the critical and analytical powers of the learner in relation to the evaluation of design and application of engineering theories
- Provide the learner with the skills to adapt and respond positively to change
- Develop critical, analytical problem-based learning skills and transferable skills expected of a learner with an Honours degree
- Enhance the development of interpersonal skills required to meet the professional standards set out by the Engineering Council

Course Learning Outcomes

The following statements define what students graduating from the BEng (Hons) Operations Engineering [progression route] course will have been judged to have demonstrated in order to achieve the award. These statements, known as learning outcomes, have been formally approved as aligned with the generic qualification descriptor for level 6 awards as set out by the UK Quality Assurance Agency (QAA)⁶.

Knowledge and Understanding

1. Demonstrate the application of the design process and design techniques when engineering solutions to specific products and processes
2. Apply appropriate mathematical methods and high level scientific and engineering principles essential to the multi discipline approach to operations engineering
3. Understand essential facts, concepts, principles and theories relating to computing and computer applications as appropriate to design and technology
4. Appreciate the engineer's responsibility to clients, markets, users and consumers, while applying management and business practices to the role of an engineer

Mental or Cognitive Skills

5. Effectively apply the skills needed for academic study and rigorous enquiry including the application of strategies for appropriate selection of relevant information from a large body of knowledge
6. Be able to critically evaluate data and a variety of types of technical information, while appreciating the limitations and uncertainty of the results

⁶ As set out in the [QAA Frameworks for Higher Education Qualifications of UK Degree-Awarding Bodies \(2014\)](#)

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7. Create and/or deploy new products or processes through the synthesis of ideas and application of theories, using a wide range of sources and technical information
8. Select and apply appropriate mathematical methods for modelling and analysing design and/or engineering problems
9. Analyse, evaluate and interpret the evidence underpinning diagnostic computer-aided design, and/or computer-aided engineering practice critically and initiate change in practice appropriately
10. Select and apply appropriate computer based methods for modelling and analysing design and/or engineering problems
11. Utilise appropriate engineering theories, practices and analytical tools when producing engineering designs and the implementation of operational systems
12. Critically evaluate engineering concepts and the performance of engineering components and/or systems when producing design proposals and/or solutions to specific circumstances or self-initiated projects

Subject Specific and Practical Skills

13. Undertake diagnostic and reflective evaluation of operational and/or engineering practice
14. Effectively use appropriate mathematical methods and engineering theories for modelling and analysing operational engineering systems and equipment
15. Use relevant test and measurement equipment to effectively conduct experimental laboratory work appropriate to operational engineering systems
16. Apply computer based and analytical engineering software to develop the engineering design of component, system and/or processes
17. Produce and evaluate designs of operational engineering systems, components, or process, to meet a specified requirement
18. Effectively apply operational engineering techniques taking account of industrial, commercial, environmental, ethical and social constraints
19. Effectively develop an appropriate honours project which is relevant to operational engineering, utilising skills and theories learnt in the execution of the project within a suitable time scale

Key Skills

20. Communicate effectively, verbally and/or non-verbally with a wide range of individuals using a variety of means
21. Evaluate own academic, professional and design performance, taking responsibility for personal and professional learning and development, understanding career opportunities and challenges ahead and beginning to plan a career path
22. Utilise problem-solving skills and analytical methods in a variety of theoretical and practical situations to produce solutions to familiar and unfamiliar problems

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23. Manage change effectively and respond to changing demands
24. Be able to manage time, prioritise workloads and recognise and manage personal emotions and stress
25. Effectively collect, manipulate and sort a variety of data, and present findings using different formats and media
26. Demonstrate the ability to apply numerical skills and techniques appropriately

Course Design

The design of this course has been guided by the following QAA Benchmark:

- Engineering (2015)

Course Structure

The BEng (Hons) Operations Engineering [progression route] comprises modules at level 6.

Module Specifications for each of these modules are included within the course handbook, available to students on-line at the beginning of each academic year.

	Module	Credits	Module Type ⁷
Level 6			
	Turbomachinery and Power Generation	20	M
	Computer Aided Engineering	0	M
	Dissertation	40	M
	Principals of Energy Engineering and Operations	20	M
	Electrical and Electronic Power and Drive Systems	20	M
	Mechanical Design and Failure of Components	20	M

Awards

On successful completion of the course, students will be awarded a BEng (Hons) Operations Engineering.

Course Delivery

The course is delivered at the University of Suffolk at East Coast College (Lowestoft). Students studying on the BEng (Hons) Operations Engineering are likely to have approximately 65 contact hours per module at Level 6. The contact hours will be a mix of lectures, seminars and practical work. Students will normally be expected to undertake 11 hours per module of independent study in an average week, but should be prepared for this to vary based on assignment deadlines and class exercises.

Course Assessment

A variety of assessments will be used on the course to enable students to experience and adapt to different assessment styles. The assessment methods used will be appropriate to

⁷ Modules are designated as either mandatory (M), requisite (R) or optional (O). For definitions, see the [Framework and Regulations for Undergraduate Awards](#)

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assess each module's intended learning outcomes. Assessment on the course overall will mainly be coursework (including assignments, presentations, reports and practical project work) with three examinations.

Course Team

The academic staff delivering this course are drawn from a team that includes teaching specialists and current practitioners. All staff are qualified in their subjects with their own specialist knowledge to contribute.

Course Costs

Students undertaking BEng (Hons) Operations Engineering [progression route] will be charged tuition fees as detailed below.

Student Group	Tuition Fees
Full-time UK/EU	£9,250 per year
Part-time UK/EU	£1,454 per 20 credit module
Full-time International	£10,080 per year
Part-time International	£1,680 per 20 credit module

Payment of tuition fees is due at the time of enrolment and is managed in accordance with the Tuition Fee Policy.

Other than the usual stationery, students would need to purchase a calculator.

Academic Framework and Regulations

This course is delivered according to the Framework and Regulations for Undergraduate Awards and other academic policies and procedures of the University and published on the [website](#).