

## DEFINITIVE COURSE RECORD

Course Title	<b>BEng (Hons) Operations Engineering [progression route]</b>
Awarding Bodies	<b>University of Suffolk</b>
Level of Award <sup>1</sup>	<b>FHEQ Level 6</b>
Professional, Statutory and Regulatory Bodies Recognition	<b>None</b>
Credit Structure <sup>2</sup>	<b>Level 6: 120 Credits</b>
Mode of Attendance	<b>Full-time and part-time</b>
Standard Length of Course <sup>3</sup>	<b>1 year full-time</b>
Intended Award	<b>BEng (Hons) Operations Engineering</b>
Named Exit Awards	<b>None</b>
Entry Requirements <sup>4</sup>	<b>120 Credits Level 4 and 120 credits Level 5 (e.g. FdSc or HNC/HND)</b>
Delivering Institution	<b>University of Suffolk at East Coast College (Lowestoft)</b>
UCAS Code	<b>H191</b>

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 6 in the 2021-22 academic year<sup>5</sup>.

### Course Summary

The BEng (Hons) Operations Engineering is a programme offering a degree level qualification to Engineers from a wide range of backgrounds.

The variety and complexity of modern equipment requires process and maintenance engineers to possess relevant multidisciplinary skills in order to analyse and specify faults and effect the relevant action. The course welcomes applicants from a wide range of engineering backgrounds as the course modules cover a wide range of both Mechanical and Electrical Disciplines.

This course will provide students with technical engineering discipline knowledge and skills, allowing them to understand engineering principles that underpin the design and operation of plant engineering systems and equipment.

Students will gain knowledge and critical understanding of the well-established principles in their field of study and the way in which those principles have developed. Students acquire

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

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

<sup>3</sup> 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](#).

<sup>4</sup> Details of standard entry requirements can be found in the [Admissions Policy](#) and further details about Disclosure and Barring Checks (DBS) can be found on the [University's DBS webpage](#).

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

## **DEFINITIVE COURSE RECORD**

skills in analytical methods, plant and process principles, project management, engineering science and programmable logic controllers.

Assessment is completed using a variety of methods including formal examination, case studies, written assignments, report writing, assignments that relate to the work place, plus practical projects.

### **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)<sup>6</sup>.

At the end of Level 6 students will be able to:

#### **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.

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

## **DEFINITIVE COURSE RECORD**

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.
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.

## DEFINITIVE COURSE RECORD

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.
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 Benchmarks:

- Engineering 2015

### Course Structure

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

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

	Module	Credits	Module Type <sup>7</sup>
Level 6			
	Turbomachinery and Power Generation	20	M
	Principles of Energy Engineering and Operations	20	M
	Mechanical Design and Failure of Components	20	M
	Electrical and Electronic Power and Drive Systems	20	M
	Honours Project	40	M

<sup>7</sup> Modules are designated as either mandatory (M), requisite (R) or optional (O). For definitions, see the Framework and Regulations for Undergraduate Awards

## DEFINITIVE COURSE RECORD

### Awards

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

### Course Delivery

The course is delivered at East Coast College (Lowestoft). Students studying full-time on BEng (Hons) Operations Engineering are likely to have approximately 200 contact hours for level 6. The contact hours will be a mix of lectures, small group sessions, workshops and academic tutorials. Students will normally be expected to undertake 10 hours 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 assess each module's intended learning outcomes. Assessment on the course overall will be approximately 78% coursework (including reports, presentations, group work, reflective learning journals and research projects) and 22% 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	£9,250 per year
Part-time UK	£1,454 per 20 credit module
Full-time EU/International	£13,725 per year
Part-time EU/International	£2,287 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.

Students are likely to incur other costs for a calculator, stationary and books amounting to approximately £25 per year.

### 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](#).