University of Suffolk

DEFINITIVE COURSE RECORD

Course Title	**FdSc Operations Engineering**
Awarding Bodies	**University of Suffolk**
Level of Award[1]	**FHEQ Level 5**
Professional, Statutory and Regulatory Bodies Recognition	**None**
Credit Structure[2]	**240 Credits** **Level 4: 120 Credits** **Level 5: 120 Credits**
Mode of Attendance	**Full-time and Part-time**
Standard Length of Course[3]	**2 years full-time**
Intended Award	**FdSc Operations Engineering**
Named Exit Awards	**CertHE Operations Engineering**
Entry Requirements[4]	**Typical Offer: 80 UCAS tariff points (or equivalent)**
Delivering Institution	**University of Suffolk at East Coast College (Lowestoft)**
UCAS Code	**H190**

This definitive record sets out the essential features and characteristics of the FdSc Operations Engineering course. The information provided is accurate for students entering level 4 in the 2017-18 academic year[5].

Course Summary

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

[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.

Course Aims

- Produce higher technicians 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 knowledge and skills to equip them for a career in industries related to operations engineering
- Develop student competence in applying IT and computer systems to engineering and design problems
- Develop the critical and analytical powers of the student in relation to the evaluation of computer software packages associated with design and engineering applications
- Provide the student with the skills to adapt and respond effectively and professionally to change
- Develop critical, analytical problem-based learning skills and transferable skills to prepare the student for degree studies and employment
- Enhance the development of interpersonal skills

Course Learning Outcomes

The following statements define what students graduating from the FdSc Operations Engineering 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 5 awards as set out by the UK Quality Assurance Agency (QAA)[6].

Knowledge and Understanding

1. Recognise essential elements of the design process and design techniques specific to particular products and processes
2. Apply mathematical methods and scientific principles essential to design technology and/or engineering disciplines
3. Understand essential facts, concepts, principles and theories relating to computing and computer applications as appropriate to design and technology
4. Appreciate the engineering technician's relationship with audiences, clients, markets, users and consumers, including management and business practices

Mental or Cognitive Skills

5. Effectively apply the skills needed for academic study and enquiry including the application of strategies for appropriate selection of relevant information from a large body of knowledge

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

6. Be able to evaluate research data and a variety of types of information and evidence critically

7. Create new processes or products through synthesis of ideas from a wide range of sources

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. Deploy appropriate theories, practices and tools for the specification, design, implementation and evaluation of computer-based systems in relation to design technology and/or engineering

12. Generate ideas, concepts, proposals, solutions or arguments independently and/or collaboratively in response to set briefs and/or self-initiated activity

Subject Specific and Practical Skills

13. Undertake skilled competent, safe, evaluative, reflective diagnostic operational engineering practice

14. Effectively use appropriate mathematical methods for modelling and analysing operational engineering systems

15. Use relevant test and measurement equipment and effectively conduct experimental laboratory work appropriate to operational engineering systems

16. Effectively use computer based engineering tools

17. Design (or modify the design of) an operational engineering system, component, or process, to meet a specified requirement

18. Effectively apply operational engineering techniques taking account of industrial and commercial restraints

19. Effectively develop an operational engineering project plan, identifying the resource requirements, and the time scales involved

Key Skills

20. Communicate effectively, both verbally and 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 Benchmark and Professional Standards

QAA Benchmarks:
- Engineering (2015)

Professional Standards:
- UK Standards for Professional Engineering Competence set out by the Engineering Council (2014)

Course Structure
The FdSc Operations Engineering comprises modules at levels 4 and 5.

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 4			
	Commercial and Operational Aspects of Engineering	20	M
	Personal Development	20	M
	Engineering Mathematics	20	M
	Engineering Science	20	M
	Plus two from the following:		
	Pneumatics and Hydraulics	20	O
	Programmable Logic Controllers	20	O
	Instrumentation and Control	20	O

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

Level 5			
	Computational and Analytical Methods	20	M
	Engineering Project	20	M
	Plant & Process Principles	20	M
	Mechanical Principles	20	M
	Electrical and Electronic Principles	20	M
	Skills in Research and Problem Solving	20	M

The availability of Optional modules is dependent upon student numbers.

Awards
On successful completion of the course, students will be awarded a FdSc Operations Engineering. Students who leave the course early may be eligible for a CertHE Operations Engineering on successful completion of 120 credits including all mandatory modules at level 4.

Course Delivery
The course is delivered at the University of Suffolk at East Coast College (Lowestoft). Students studying full-time on FdSc Operations Engineering are likely to have approximately 60 contact hours per taught module. The contact hours will be a mix of lectures, seminars and practical work. Students will normally be expected to undertake approximately 140 hours of independent study per module but should be prepared for weekly workload 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 60% coursework (including assignments, presentations, reports and practical project work) and 40% examinations. Some modules also have a practical assessment element.

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 FdSc Operations Engineering will be charged tuition fees as detailed below.

Student Group	Tuition Fees
Full-time UK/EU	£8,220 per year
Part-time UK/EU	£1,370 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 items there is one textbook that may need to be purchased for Engineering Mathematics.

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.