

**DEFINITIVE COURSE RECORD**

Course Title	<b>BSc (Hons) Software Engineering</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>360 Credits Level 4: 120 Credits Level 5: 120 Credits Level 6: 120 Credits</b>
Mode of Attendance	<b>Full-time and part-time</b>
Standard Length of Course <sup>3</sup>	<b>3 years full-time</b>
Intended Award	<b>BSc (Hons) Software Engineering</b>
Named Exit Awards	<b>DipHE Software Engineering CertHE Software Engineering</b>
Entry Requirements <sup>4</sup>	<b>Typical offer: 112 UCAS tariff points or equivalent and normally GCSE mathematics at Grade C or equivalent</b>
Delivering Institution(s)	<b>University of Suffolk</b>
UCAS Code	<b>I305</b>

This definitive record sets out the essential features and characteristics of the BSc (Hons) Software Engineering course. The information provided is accurate for students entering level 4 in the 2020-21 academic year<sup>5</sup>.

**Course Summary**

This degree will provide you with the knowledge and hands on skills required by employers in the IT and telecommunications sectors. It is designed to give students opportunities to acquire the specialist academic knowledge, practical skills and industrial certification that will help secure employment in this competitive economy. Graduates will have achieved core competencies in network engineering, software engineering, data analysis, cyber security, business analysis and project management., and have specialist expertise in software development, data analysis, and cyber security.

**Course Aims**

The course aims are:

- Provide students with a sound knowledge and understanding of software engineering and data analysis

<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](#)

<sup>5</sup> 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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- Enable students to be proficient in the specification, design, creation, testing and roll-out of software products
- Enable students to be proficient in the specification, design, creation, manipulation and usage of database and information engineering solutions
- Provide students with sound knowledge, understanding and practical skills in advanced software topics
- Provide students with comprehensive knowledge and understanding of cyber security for networks, software and systems
- Help students develop competencies in effective interpersonal and business communication, presentation skills, business and project management
- Help students develop the personal qualities and professional attributes required by employers (these include: reliability, integrity, ethical approach, dependability, team work and reflection)
- Encourage students to understand their own technological responsibilities in the context of the client organisation and its commercial and business operation
- Develop students' ability to take responsibility for their own learning and professional development

### Course Learning Outcomes

The following statements define what students graduating from the BSc (Hons) Software 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 6 awards as set out by the UK Quality Assurance Agency (QAA)<sup>6</sup>.

#### *Knowledge and understanding*

1. Express and employ detailed knowledge and systematic understanding of essential facts, concepts, principles and theories, both established and emergent, relating to cyber security for software, networks, and systems
2. Express and employ detailed knowledge and systematic understanding of essential facts, concepts, principles and theories, both established and emergent, relating to advanced topics in information and software engineering
3. Utilise knowledge and skills relating to cyber security to analyse, develop and deploy ethical "cyber attacks" for essential penetration testing of software, networks and systems, and to analyse, develop and deploy cyber defences in depth to protect software, networks, and systems, using both established and bleeding-edge techniques as appropriate
4. Utilise knowledge and skills relating to advanced topics in information and software engineering to analyse, specify, develop and deploy technical solutions to appropriate problems, using both established and bleeding-edge techniques as appropriate
5. Understand, describe, and comment upon the literature and cutting edge research in

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

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cyber security and specific areas of data analysis and software engineering, and appreciate the associated uncertainties, ambiguities, and limits to knowledge at the forefront of the discipline

### *Cognitive skills*

6. Apply methods and techniques learned in cyber security and advanced topics in data analysis and software engineering to consolidate, extend, and apply knowledge and understanding to extended realistic and real-world projects
7. Apply detailed knowledge, systematic understanding, and mastered techniques to initiate and execute one major and multiple minor projects in different topic areas
8. Critically evaluate arguments, concepts, requirements, constraints and data in order to make rational judgements on appropriate algorithms, designs, methods, and configurations leading to the necessary analysis, design, implementation, and/or testing of a solution or identification of a class of solutions to significant problems
9. Present ideas, information, analyses, designs, implementations, tests and results relating to cyber security, data analysis or software engineering, critically, comprehensibly and succinctly to both specialist and non-specialist audiences

### *Subject-specific skills*

10. Deploy appropriate established and/or cutting edge theory, practices and tools for the successful attack and defense of software, networks and systems
11. Recognise the legal, ethical and professional issues in all aspects of cyber security, and be able to exercise initiative and personal responsibility in cyber security
12. Research, design, implement, test, utilise and document software solutions to address specific problems, using their knowledge, understanding and technical skills in cyber security, data analysis, and software engineering

### *Key/transferable skills*

13. Develop an understanding of a specialist subject or problem area in computing to a level where they can effectively evaluate it, analyse possible solutions, design an appropriate solution and bring that solution to a successful conclusion in a defined time-frame, showing by doing so their capabilities and readiness for lifelong learning and professional training
14. Evidence the qualities and transferable skills necessary for graduate-level employment requiring the exercising of initiative, personal responsibility, and decision making, through working individually and in groups on mini-projects, extended case studies and scenarios, and their major project

## **Course Design**

The design of this course has been guided by the following QAA Benchmarks and Apprenticeship Standards:

- the QAA 2016 Computing subject benchmark (<http://www.qaa.ac.uk/en/Publications/Documents/Subject-benchmark-statement-Computing.aspx.pdf>),
- the Framework for Higher Education Qualifications (2008, 2014) (FHEQ)

**DEFINITIVE COURSE RECORD****Course Structure**

The BSc (Hons) Software Engineering comprises modules at levels 4, 5 and 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>
<b>Level 4</b>			
	Platforms	20	Requisite
	Networking Overview	20	Requisite
	Introduction to Programming	20	Requisite
	Operating Systems	20	Requisite
	Foundations of Management	20	Requisite
	Personal and Professional Development	20	Requisite
<b>Level 5</b>			
	Software Design Development and Engineering	20	Requisite
	Data Structures Algorithms and Advanced Programming	20	Requisite
	Introduction to Relational Databases	20	Requisite
	Advanced Networking Concepts	20	Requisite
	Multimedia, Mobile and Internet	20	Requisite
	Research Skills	20	Mandatory
<b>Level 6</b>			
	Cyber Security: Attack	20	Requisite
	Cyber Security: Defence	20	Requisite
	Distributed Systems	20	Requisite
	Information Engineering	20	Requisite
	Project and Dissertation	40	Mandatory

**Awards**

On successful completion of the course, students will be awarded a BSc (Hons) Software Engineering. Students who leave the course early may be eligible for a DipHE Software Engineering on successful completion of 240 credits including all mandatory modules at levels 4 and 5, or a CertHE Software Engineering on successful completion of 120 credits.

**Course Delivery**

The course is delivered at Ipswich. Students studying full-time on BSc (Hons) Software Engineering are likely to have approximately 228 contact hours for level 4, 224 contact hours for level 5 and 180 contact hours for level 6. The contact hours will be a mix of lectures, seminars, practical classes, and tutorials. Students will normally be expected to undertake 30

<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](#)

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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 mainly coursework (including assignments, dissertations, essays, reports, presentations, group work, reflective learning journals and research projects), with four examinations and practical time-constrained assessments.

### 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 BSc (Hons) Software Engineering 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	£13,330 per year
Part-time International	£2,220 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 may choose to enrol onto certification exams – details of the costs of these will be advised when available. Taking certification exams is not a mandatory part of the degree.

There is no regular requirement for students to pay additional course fees. Where supplementary activities are offered there may be a small charge to cover their cost (for example, for transport).

### 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](#).