Programme Specification

Computer Science and Software Engineering (2017-18)

This specification provides a concise summary of the main features of the programme and the learning outcomes that a typical student might reasonably be expected to achieve and demonstrate if s/he takes full advantage of the learning opportunities that are provided.

Awarding Institution	University of Southampton
Teaching Institution	University of Southampton
Mode of Study	Full Time
Duration in Years	3 Years BSc/BEng 4 Years MEng 5 Years MEng with Industrial Studies
Accreditation details	Currently accredited by the British Computer Society (BCS) and Institution of Engineering and Technology (IET)
Final award	Master of Engineering (MEng)
Name of award	Computer Science and Software Engineering
Interim Exit awards	Bachelor of Engineering (BEng) Bachelor of Science (BSc) Bachelor of Engineering (BEng Ordinary) Bachelor of Science (BSc Ordinary) Diploma of Higher Education (DipHE) Certificate of Higher Education (CertHE)
FHEQ level of final award	Level 7
UCAS code	G401 MEng Computer Science G4GR MEng Computer Science with Artificial Intelligence G4G5 MEng Computer Science with Distributed Systems and Networks G450 MEng Computer Science with Image and Multimedia Systems G421 MEng Computer Science with Mobile and Secure Systems II10 MEng Computer Science with Cyber Security G600 MEng Software Engineering MEng Computer Science with Industrial Studies MEng Software Engineering with Industrial Studies G400 BSc Computer Science G4G6 BEng Software Engineering
QAA Subject Benchmark or other external reference	Quality Assurance Agency (QAA) Computing Benchmark QAA Framework for Higher Education Qualifications (FHEQ) Engineering Council (UK-SPEC)
Programme Coordinator	Dr Nicholas Gibbins
Date Specification last updated	07/12/2017

Programme Overview

Brief outline of the programme

Computer Science and Software Engineering drive the fundamental technologies of today's connected world. Every area of our lives, from medicine and healthcare to industrial applications, global trade, transport, communications, entertainment and security, is dependent on computing technology. As a result, computer science is now one of the fastest growing job fields in the world and skilled computer scientists are very much in demand.

The Computer Science and Software Engineering programme at the University of Southampton is a world-leading research-led undergraduate programme that aims to give students a robust, in-depth grounding in the discipline,

while offering a broad range of optional modules that derive from the research carried out by staff in ECS (for example, the Cyber Security themed degree draws on expertise from the EPSRC/GCHQ-awarded Academic Centre of Excellence in Cyber Security Research). The programme is designed to give you experience of core technologies and techniques, while making it possible for you to work in depth and specialise in what really interests you by focussing your studies in one of six specialist areas (Software Engineering, Artificial Intelligence, Distributed Systems and Networks, Image and Multimedia Systems, Mobile and Secure Systems, and Cyber Security) through our themed degrees. Our project work will enable you to acquire valuable skills in teamwork, project planning, time management and presentation, applying your learning to design and build problems, and working to a brief, and we also offer the opportunity to spend a year in industry as part of our "with Industrial Studies" variant degrees. All of these experiences will stand you in good stead as you move into your career. Our outstanding lab facilities and research-led teaching ensure that, at the end of your programme, your skills will be highly regarded by leading employers.

Please note: As a research-led University, we undertake a continuous review of our programmes to ensure quality enhancement and to manage our resources. As a result, this programme may be revised during a student's period of registration, however, any revision will be balanced against the requirement that the student should receive the educational service expected. Please read our ***Disclaimer*** to see why, when and how changes may be made to a student's programme.

Programmes and major changes to programmes are approved through the University's programme validation process, which is described in the University's Quality handbook.

Learning and teaching

A range of learning and teaching methods are used on this programme, including:

- Staff-led lectures, demonstrations, laboratories and seminars
- Directed reading
- Student-led seminars and presentations
- Specification, design, analysis, implementation and verification exercises
- Revision for written examinations
- Staff and post-graduate supervision of your research dissertation
- Industrial placements

Assessment

A range of assessment methods are used on this programme to enable students to demonstrate their achievement of the intended learning outcomes, including:

- Written examinations
- In-class tests
- Design exercises
- Programming exercises
- Oral presentations
- Written assessments, including technical reports, literature searches and surveys
- Assessed laboratories and logbook checks
- Group work exercises, presentations and reports

Educational Aims of the Programme

The aims of this programme are to:

- Provide you with a solid foundation and to develop the skills needed for a wide range of professional engineering careers as a high quality practitioner and leader in business, technology, research and development
- Provide a balance of theoretical, design and practical subjects which allows you to exploit your individual talents
- Provide a coherent selection of specialist subjects which allows you to focus your studies in a themed area within computer science and software engineering

- Have a flexible structure which is relevant and attractive not only to you, but also to staff, and industry and which is responsive to advances in technology and the needs of the community
- Be at the leading edge of scholarship in computer science and software engineering
- Maximise the benefit of an environment in which staff are carrying out internationally respected research
- Provide an environment which contributes towards your personal and professional development and acts as a foundation for a wide range of subsequent study and lifelong learning
- Provide a learning environment with sufficient laboratories, appropriate up-to-date software and hardware, and a first class web-site, motivating you towards the practice of engineering
- Provide a supportive pastoral environment with opportunities for you to participate in social and recreational activities.
- (For the "with Industrial Studies" variant) Provide students with industrial experience, to enable students to relate their academic skills and knowledge to contemporary industrial practice.

Programme Learning Outcomes

The programme provides you with opportunities to develop and demonstrate knowledge and understanding, subject-specific intellectual, and transferable and generic skills as listed below. These outcomes have been developed with reference to the QAA Subject Benchmark for Computing, as well as the Framework for Higher Education Qualifications and the British Computer Society's accreditation guidelines. A mapping of these learning outcomes to core and compulsory modules is given in the Appendix.

Knowledge and Understanding

Having successfully completed this programme you will be able to demonstrate knowledge and understanding of:

A1. The following topics, which are defined in the QAA Computing Benchmark:

Architecture, Artificial Intelligence, Comparative Programming Languages, Computer Communications, Compilers and Syntax-Directed Tools, Computer Networks, Computer Vision and Image Processing, Concurrency and Parallelism, Databases, Data Structures and Algorithms, Distributed Computing Systems, Document Processing, e-Business, Graphics and Sound, Human-Computer Interaction, Information Retrieval, Information Systems, Intelligent Information Systems Technologies, Management Issues, Middleware, Multimedia, Operating Systems, Professionalism, Programming Fundamentals, Security and Privacy, Simulation and Modelling, Software Engineering, Systems Analysis and Design, Theoretical Computing, Web-based Computing

A2. *(For BEng/MEng Software Engineering only)* The broader software engineering context, the state of the art in software engineering, and the application of advanced software engineering techniques.

A3. *(For MEng Computer Science with Artificial Intelligence only)* The state of the art in artificial intelligence research, and the application of AI techniques to a wide range of problems.

A4. *(For MEng Computer Science with Distributed Systems and Networks only)* The state of the art in distributed or networked systems, the issues that arise in such systems, and the approaches that may be applied to mitigate those issues.

A5. *(For MEng Computer Science with Image and Multimedia Systems only)* The state of the art in multimedia research, and the application of techniques for creating and processing multimedia content.

A6. *(For MEng Computer Science with Mobile and Secure Systems only)* The state of the art in mobile and secure computer systems, the issues that arise in such systems, and the approaches that may be applied to mitigate those issues.

A7. *(For MEng Computer Science with Cyber Security only)* The state of the art in cyber security, including the concepts, principles, technologies and practices for addressing current and emerging cyber security threats and challenges.

A8. *(For the "with Industrial Studies" variants)* The application of your academic skills and knowledge to solving problems in industry.

MEng degrees are awarded to students demonstrating increased range and depth of knowledge, and themed ("Computer Science with X") degrees to those demonstrating increased depth of specialist knowledge.

Teaching and Learning Methods

The topics listed in skill A1 are taught mainly through lectures and directed reading. Learning is reinforced through tutorials (in Parts I and II – the first two years of study), the supervision of individual and group projects, and other coursework assignments.

Skills A2-A7 are taught through lectures and directed reading that form part of specialist modules, and through the individual project in Part III.

Skill A8 is covered in the Year in Industry between Parts III and IV.

Assessment methods

Knowledge and understanding of the topics listed in skill A1 is assessed mainly through written examinations, with some in-class tests, coursework and project work contributing to the assessment of these areas.

Skills A2-A7 are assessed through written examinations, in-class tests and coursework, and through the individual project in Part III.

Skill A8 is assessed by written reports and oral examination.

Subject Specific Intellectual and Research Skills

Having successfully completed this programme you will be able to:

B1. Elicit, record, and analyse requirements arising from specific problems with given practical constraints
B2. Apply appropriate knowledge, theory, tools, methods and techniques to plan, specify, design, model, implement, test, and document computer-based solutions both individually and in teams
B3. Describe the context and processes involved in the effective deployment of computer-based solutions, including the use of quality systems and engineering management practices
B4. Evaluate computer-based solutions, both existing and hypothetical, in terms of general quality attributes and also possible trade-offs presented within a given problem
B5. Critically evaluate the impact of current and emerging methods and technologies
B6. Recognise the professional, moral and ethical issues involved in the exploitation of computer technology and be guided by the adoption of appropriate professional, ethical and legal practices
B7. Explain the financial, social and environmental factors of significance to engineering, and the broader obligations of engineers to society
B8. Recognise any risks or safety aspects that may be involved in the operation of computing equipment within a given context
B9. *(MEng only)* Explain clearly the techniques that are applicable to research or advanced scholarship in the discipline, and critically evaluate this research and scholarship

In this context, the term "computer-based solutions" includes computer systems and applications using database and other packages, as well as bespoke GUI, client-server and distributed programs running on thin or thick clients, servers, and/or embedded systems.

Teaching and Learning Methods

Skills B1-B4 are the subject of modules in each Part, taught mainly through lectures and tutorials. Practical software development skills are also taught in computer laboratories. These outcomes are further developed through coursework and project work ranging from programming exercises in Part I, to major individual (Part III) and group (Part IV) design projects.

Skills B5 and B9 are taught through the demonstration and use of up-to-date methods and technologies, Guest Lecturers from industry, and, for MEng students, industrial placements, and specialist seminars, including directed reading of research materials.

Skills B6-B8 are covered in lectures and tutorials in the first part and further developed through guest lectures and directed reading, particularly in Parts III and IV.

Assessment methods

Skills B1-B4 are assessed through programming exercises, design exercises, design projects, logbook checks, oral presentations, and technical design reports. Skills B5 and B9 are assessed through technical reports and oral presentations. Skills B6-B8 are assessed through technical reports and logbook checks.

Transferable and Generic Skills

Having successfully completed this programme you will be able to:

C1. Manage your learning and development including time management and organisational skills
C2. Solve problems of a non-routine nature in creative and innovative ways
C3. Work as a member of a team, recognising the different roles within a team, different ways of organising teams, and the requirements and responsibilities of leadership

C4. Present clearly and succinctly to a range of audiences (orally, electronically and in writing) rational and reasoned arguments that address a given information handling problem or opportunity, using either current or emerging technologies
C5. Demonstrate numeracy and use appropriate mathematics in communicating results, concepts and ideas, and cases with a quantitative dimension; use mathematics as a tool to solve complex problems
C6. Operate computing and other IT equipment effectively, taking into account its logical and physical properties
C7. Retrieve information effectively, using, for example, browsers, search engines and catalogues
C8. Explain the need for continuing professional development in recognition of lifelong learning
C9. *(MEng only)* Explain how established techniques of research and enquiry are used to create and interpret subject knowledge
C10. *("with Industrial Studies" only)* Apply the key skills listed above to industrial projects.

Teaching and Learning Methods

Skills C1-C3 are covered in lectures in Part I, but are mainly developed through the significant practical problem-solving elements of the programme in later Parts, which contribute 50% or more to your final degree classification. Adherence to deadlines is encouraged through late submission penalties.

Skills C4-C7 are covered in lectures in Part I, and written guidelines are provided in support of specific assessed coursework and project reports. Skill C5 is also developed through in-class tests.

Skill C8 is covered in lectures in Part I, and is reinforced through the focus on current and emerging technologies, particularly in Parts III and IV.

Skill C9 is covered in lectures and seminars in Part IV.

Skill C10 is covered by the Year in Industry between Parts III and IV.

Assessment methods

Skills C1, C2, and C6 are assessed implicitly as part of all our coursework and project assessments.

Skill C3 is assessed through the use of group projects in Parts II and IV, in which students are asked to rate their own and other team member's contributions; student marks for group work therefore contain both a component based on the performance of the group as a whole, and a component based on each group's collective reflection on individual contributions.

Skills C4, C5 and C7-C10 are assessed through technical reports and presentations. Skill C8 is not formally assessed.

Graduate Attributes

Graduate Attributes are the personal qualities, skills and understanding you can develop during your studies. They include but extend beyond your knowledge of an academic discipline and its technical proficiencies. Graduate Attributes are important because they equip you for the challenge of contributing to your chosen profession and may enable you to take a leading role in shaping the society in which you live.

We offer you the opportunity to develop these attributes through your successful engagement with the learning and teaching of your programme and your active participation in University life. The skills, knowledge and personal qualities that underpin the Graduate Attributes are supported by your discipline. As such, each attribute is enriched, made distinct and expressed through the variety of learning experiences you will experience. Your development of Graduate Attributes presumes basic competencies on entry to the University.

There are six Graduate Attributes:

Global Citizenship

Global Citizens recognise the value of meaningful contribution to an interconnected global society and aspire to realise an individual's human rights with tolerance and respect.

Ethical Leadership

Ethical Leaders understand the value of leading and contributing responsibly to the benefit of their chosen professions, as well as local, national and international communities.

Research and Inquiry

Research and Inquiry underpin the formulation of well-informed new ideas and a creative approach to problem resolution and entrepreneurial behaviours

Academic

Academic attributes are the tools that sustain an independent capacity to critically understand a discipline and apply knowledge

Communication Skills

Communication Skills encompass an individual's ability to demonstrate knowledge, and to express ideas with confidence and clarity to a variety of audiences

Reflective Learner

The Reflective Learner is capable of the independent reflection necessary to develop their learning and continuously meet the challenge of pursuing excellence

The following table shows the mapping between the University's Graduate Attributes, and a key subset of the core and compulsory modules that form the degree programme.

Code	Module Title	Global Citizenship	Ethical Leadership	Research and Inquiry	Academic	Communication Skills	Reflective Learner
COMP1205	Professional Development	•	•			•	
COMP3200	Individual Project			•	•	•	•
COMP3219	Engineering Management and Law	•	•				
ELEC3200	Industrial Studies		•		•	•	•
COMP6200	Group Design Project			•	•	•	•

Programme Structure

Typical course content

The degrees offered within the Computer Science and Software Engineering programme are based around a common core that spans all four years of the programme. In the first two years ('Parts') of the programme, students take compulsory modules that introduce them to the basic theory underpinning computer science, the ethical and legal framework in which computer scientists and software engineers work, the practicalities of working with computers, and key techniques and application areas. In Parts III and IV, the core topics focus on professional practice, with major individual and group projects, and taught modules covering industrial practice and engineering management. There is also a range of optional modules offered in Parts III and IV; many of these options are in the six specialist areas of Artificial Intelligence, Distributed Systems and Networks, Image and Multimedia Systems, Mobile and Secure Systems, Software Engineering, and Cyber Security.

If you successfully complete three full parts of study, you may graduate with an honours degree: BSc (hons) or BEng (hons). If you successfully complete four full parts of study, you may graduate with a MEng degree. If you obtain at least 60 ECTS credits in one of the five specialist areas across all four Parts (25% of your overall credits), you qualify for the award of MEng Computer Science with X, or MEng Software Engineering (a "themed degree"). Students may transfer between themed degree programmes (and from a themed programme to MEng Computer Science) providing that they have met the relevant requirements for specialist modules.

Students intending to graduate with MEng degrees are strongly recommended to spend 20 weeks in industry, usually as two 10-week summer placements. Alternatively, if you complete a year in industry, as part of the "with Industrial Studies" variant, you will complete a study worth 30 ECTS credits at level 6, which will qualify you for the award of the enhanced degree. Consult the ECS Industrial Liaison Tutor for advice concerning placements.

Programme details

Available Modules

The information in this programme specification is accurate at the time of writing, but may change in minor ways from year to year due to staff availability or other factors. Some of these modules are subject to pre-requisites and exclusions that, for brevity, are not given here; this information is available in the module specifications on the ***ECS Website***.

The module requirements for each programme are shown for each Part below; modules are either core (must be taken and passed), compulsory (must be taken), optional (may be taken) or specialist (optional but contributing to the requirements of a themed degree).

It should be noted that it may not be possible to run some optional modules if the number of students registered on the module is very small. It should also be noted that optional module choice can be restricted by the University Timetable, which varies from year to year: some optional modules may clash with other optional or compulsory modules. Please be aware that many modules are shared between different cohorts; the class size depends on cohort size, which varies from year to year.

Part I

In your first year, you will take 60 ECTS at FHEQ Level 4, 30 ECTS in each semester as shown below. Note that all Part I modules are core, and must be passed in order to progress.

Code	Module Title	ECTS	FHEQ	MEng CS	MEng CS w/ AI	MEng CS w/ DSN	MEng CS w/ IMS	MEng CS w/ MSS	MEng CS w/ CS	MEng SE	BSc CS	BEng SE
Semester 1												
COMP1215	Foundations of Computer Science	7.5	4	●	●	●	●	●	●	●	●	●
COMP1202	Programming I	7.5	4	●	●	●	●	●	●	●	●	●
COMP1203	Computer Systems I	7.5	4	●	●	●	●	●	●s	●	●	●
COMP1205	Professional Development	7.5	4	●	●	●	●	●	●	●	●	●
Semester 2												
COMP1201	Algorithmics	7.5	4	●	●	●	●	●	●	●	●	●
COMP1206	Programming II	7.5	4	●	●	●	●	●	●	●	●	●
COMP1216	Software Modelling and Design	7.5	4	●	●	●	●	●	●	●	●	●
COMP1204	Data Management	7.5	4	●	●	●	●	●	●	●	●	●

● indicates a core module (must be taken and passed)
○ indicates a compulsory module (must be taken)
s indicates a specialist module that counts towards the requirements for a themed ("with X") degree
italics indicate a module from outside ECS that counts towards the out-of-programme limit

Part II

In your second year, you will take 60 ECTS at FHEQ Level 5, 30 ECTS in each semester. Note that certain modules are marked as specialist modules, which count towards the requirements for a themed degree (that compulsory modules are also marked as specialist reflects our view that all students should have some exposure to the breadth of specialisms on offer).

Broadening options may be chosen from the list of modules provided by the ***Curriculum Innovation Project***.

Code	Module Title	ECTS	FHEQ	MEng CS	MEng CS w/ AI	MEng CS w/ DSN	MEng CS w/ IMS	MEng CS w/ MSS	MEng CS w/ CS	MEng SE	BSc CS	BEng SE
Semester 1												
COMP2207	Distributed Systems and Networks	7.5	5	○	○	○s	○	○	○	○	○	○
COMP2209	Programming III	7.5	5	○	○	○	○	○	○	○	○	○
COMP2208	Intelligent Systems	7.5	5	○	○s	○	○	○	○	○	○	○
COMP2210	Theory of Computing	7.5	5	○	○	○	○	○	○	○	○	○
Semester 2												
COMP2211	Software Engineering Group Project	7.5	5	○	○	○	○	○	○	○	○	○
COMP2212	Programming Language Concepts	7.5	5	○	○	○	○	○	○	○	○	○
COMP2213	Interaction Design	7.5	5	○	○	○	○s	○			○	○
COMP2214	Advanced Software Modelling and Design	7.5	5							○s		○s
COMP2215	Computer Systems II	7.5	5					○s	○	○		
COMP2216	Principles of Cyber Security	7.5	5						○s			
	BROADENING OPTION	7.5										

● indicates a core module (must be taken and passed)
○ indicates a compulsory module (must be taken)
s indicates a specialist module that counts towards the requirements for a themed ("with X") degree
italics indicate a module from outside ECS that counts towards the out-of-programme limit

Part III

The major element of Part III is the Individual Project, which runs all year. In semester 1, students intending to graduate with a MEng degree must take COMP3219 Engineering Management and Law.

You will also take 30 ECTS of optional modules (22.5 ECTS for MEng students) from the list below, for a total load of 30 ECTS per semester. You may select at most 15 ECTS worth of options from outside the programme.

If you wish to graduate with a themed degree (MEng Computer Science with X or MEng/BEng Software Engineering), you must take at least 15 ECTS of specialist modules, and your Individual Project must be related to your theme.

Broadening options may be chosen from the list of modules provided by the ***Curriculum Innovation Project***.

Code	Module Title	ECTS	FHEQ	MEng CS (inc. w/ IS)	MEng CS w/ AI	MEng CS w/ DSN	MEng CS w/ IMS	MEng CS w/ MSS	MEng CS w/ CS	MEng SE (inc. w/ IS)	BSc CS	BEng SE
Semester 1												
COMP3200	Individual Project A	7.5	6	●	●s	●s	●s	●s	●s	●s	●	●s
COMP3219	Engineering Management and Law	7.5	6	○	○	○	○	○	○	○		
COMP3207	Cloud Application Development	7.5	6			s		s		s		s
COMP3204	Computer Vision	7.5	6		s		s					
COMP3201	Cyber Security	7.5	6			s		s		s		s
COMP3206	Machine Learning	7.5	6		s							
COMP3215	Real Time Computing and Embedded Systems	7.5	6			s		s		s		s
ELEC3201	Robotic Systems	7.5	6		s							
COMP3208	Social Computing	7.5	6									
MATH3081	*Operational Research*	7.5	6									
	BROADENING OPTION											
Semester 2												
COMP3200	Individual Project B	15	6	●	●s	●s	●s	●s	●s	●s	●	●s
ELEC3219	Advanced Computer Architecture	7.5	6					s				
COMP3210	Advanced Computer Networks	7.5	6			s		s				
COMP3211	Advanced Databases	7.5	6							s		s
COMP3212	Computational Biology	7.5	6		s							
COMP3214	Principles and Practice of Computer Graphics	7.5	6				s					
COMP3217	Secure Systems	7.5	6					s	○s			
COMP3218	Game Design and Development	7.5	6				s					
MATH3082	*Optimization*	7.5	6									
	BROADENING OPTION											

● indicates a core module (must be taken and passed)
○ indicates a compulsory module (must be taken)
s indicates a specialist module that counts towards the requirements for a themed ("with X") degree
italics indicate a module from outside ECS that counts towards the out-of-programme limit

Year in Industry

Students on the "with Industrial Studies" variant will complete a year at a recognised partner company between Parts III and IV. During this year, students must complete one or more projects, as agreed between the partner company and ECS. The placement will be assessed by a report and other activities, as described in the module specification (see also the Assessment Mapping in the Appendix). This module is core, and must be passed for the award of the "with Industrial Studies" degree title, but marks for this module will not contribute to the final degree classification.

Code	Module Title	ECTS	FHEQ	MEng CS	MEng CS w/ AI	MEng CS w/ DSN	MEng CS w/ IMS	MEng CS w/ MSS	MEng CS w/ CS	MEng SE	MEng CS w/ IS	MEng SE w/ IS
Semester 1/2												
ELEC3200	Industrial Studies	30	6								●	●

● indicates a core module (must be taken and passed)
○ indicates a compulsory module (must be taken)
s indicates a specialist module that counts towards the requirements for a themed (“with X”) degree
italics indicate a module from outside ECS that counts towards the out-of-programme limit

Part IV

In Part IV, all students take ELEC6200 Group Design Project, in which they work in a team that may include students from other engineering disciplines. This project spans both semesters. The Group Design Project taken by students on MEng Computer Science with Cyber Security would be expected to be a cyber security project with an industrial partner.

In addition to the Group Design Project, you must take a further 37.5 ECTS of options (five modules) from the list below, comprising 15 ECTS of options in the first semester and 22.5 ECTS of options in the second semester (for a total load of 30 ECTS per semester). You may select at most 15 ECTS worth of options from outside the programme.

If you wish to graduate with a themed degree (MEng Computer Science with X or MEng Software Engineering), you must take at least 15 ECTS of specialist modules. It is also possible to count a relevant COMP6228 Individual Research Project as 7.5 ECTS toward your specialist area.

If you are enrolled in MEng Computer Science with Cyber Security and you wish your degree to be certified by GCHQ, you must take at least 52.5 ECTS of specialist modules.

Alternatively, Semester 2 of Part IV may be taken at a partner institution overseas, which has been approved by the Erasmus coordinator. In this case, the Group Report, Group Presentations and Individual Reflection parts of ELEC6200 should submitted as usual, some at the beginning of semester II. However, the Individual Report and Poster on Business Case Study parts of ELEC6200 will be set aside. ELEC6200 will therefore count for 15 ECTS credits. The modules selected at the overseas institution must be approved by the programme leader. The module selection must include at least 30 ECTS (or equivalent) at masters level, that is relevant to the degree title. In 'with X' programmes, the requirement to take 15 ECTS credits specific to the specialisation must be met across the two semesters. The marks awarded by the overseas institution will be converted to equivalent UK marks by the Erasmus coordinator.

Code	Module Title	ECTS	FHEQ	MEng CS	MEng CS w/ AI	MEng CS w/ DSN	MEng CS w/ IMS	MEng CS w/ MSS	MEng CS w/ CS	MEng SE	MEng CS w/ IS	MEng SE w/ IS
Semester 1												
ELEC6200	Group Design Project A	15	7	●	●	●	●	●	●s	●	●	●
COMP6219	Designing Usable and Accessible Technologies	7.5	7				s			s		s
COMP6202	Evolution of Complexity	7.5	7		s							
WEBS6201	Foundations of Web Science	7.5	7									
COMP6203	Intelligent Agents	7.5	7		s							
COMP6204	Software Project Management and Development	7.5	7							s		s
COMP6218	Web Architecture	7.5	7			s		s				
COMP6205	Web Development	7.5	7			s		s		s		s
COMP6224	Foundations of Cyber Security	7.5	7									
COMP6230	Implementing Cyber Security	7.5	7						○			
COMP6236	Software Engineering and Cyber Security	7.5	7						○s			
ELEC6245	Wireless Networks	7.5	7			s		s				
*MATH6115**	*Statistics for Engineering Systems*	7.5	7									

● indicates a core module (must be taken and passed)
○ indicates a compulsory module (must be taken)
s indicates a specialist module that counts towards the requirements for a themed ("with X") degree
* indicates that at most one of the starred modules may be taken
italics indicate a module from outside ECS that counts towards the out-of-programme limit

Code	Module Title	ECTS	FHEQ	MEng CS	MEng CS w/ AI	MEng CS w/ DSN	MEng CS w/ IMS	MEng CS w/ MSS	MEng CS w/ CS	MEng SE	MEng CS w/ IS	MEng SE w/ IS
Semester 2												
ELEC6200	Group Design Project B	7.5	7	●	●	●	●	●	●s	●	●	●
COMP6228	Individual Research Project	7.5	7		s	s	s	s		s		s
COMP6206	Advanced Computer Vision	7.5	7		s		s					
COMP6207	Advanced Intelligent Agents	7.5	7		s							
COMP6208	Advanced Machine Learning	7.5	7		s							
COMP6209	Automated Code Generation	7.5	7							s		s
COMP6211	Biometrics	7.5	7		s				s			
ELEC6212	Bio-Inspired Robotics	7.5	7		s							
COMP6212	Computational Finance	7.5	7		s							
ELEC6242	Cryptography	7.5	7			s		s	s			
COMP6201	E-Business Strategy	7.5	7							s		s
ELEC6213	Image Processing	7.5	7		s		s					
COMP6214	Open Data Innovation	7.5	7					s				
COMP6215	Semantic Web Technologies	7.5	7		s							
COMP6216	Simulation Modelling for Computer Science	7.5	7		s							
COMP6217	The Science of Online Social Networks	7.5	7									
COMP6234	Data Visualisation	7.5	7				s					
COMP6237	Data Mining	7.5	7		s							
CRIM6008	Cyber Crime, Insecurity and the Dark Web	7.5	7						s			

● indicates a core module (must be taken and passed)
○ indicates a compulsory module (must be taken)
s indicates a specialist module that counts towards the requirements for a themed ("with X") degree
* indicates that at most one of the starred modules may be taken
italics indicate a module from outside ECS that counts towards the out-of-programme limit

Additional Costs

Students are responsible for meeting the cost of essential textbooks, and of producing such essays, assignments, laboratory reports and dissertations as are required to fulfil the academic requirements for each programme of study. Costs that students registered for this programme typically also have to pay for are included in Appendix 2.

Progression Requirements

The programme follows the University's regulations for ***Progression, Determination and Classification of Results: Undergraduate and Integrated Masters Programmes***, as set out in Section IV of the University Calendar, and supplemented by the ***ECS-specific undergraduate regulations*** in Section XII.

Intermediate exit points

You will be eligible for an intermediate exit award if you complete part of the programme but not all of it, as follows:

Qualification		FHEQ	Minimum overall ECTS credits	Minimum ECTS credits at award level
Honours Degree	BSc(hons), BEng(hons)	6	180	45
Ordinary Degree	BSc, BEng	6	150	30
Diploma of Higher Education	DipHE	5	120	45
Certificate of Higher Education	CertHE	4	60	45

Support for student learning

There are facilities and services to support your learning some of which are accessible to students across the University and some of which will be geared more particularly to students in your particular Faculty or discipline area.

The University provides:

- library resources, including e-books, on-line journals and databases, which are comprehensive and up-to-date; together with assistance from Library staff to enable you to make the best use of these resources
- high speed access to online electronic learning resources on the Internet from dedicated PC Workstations onsite and from your own devices; laptops, smartphones and tablet PCs via the Eduroam wireless network. There is a wide range of application software available from the Student Public Workstations.
- computer accounts which will connect you to a number of learning technologies for example, the Blackboard virtual learning environment (which facilitates online learning and access to specific learning resources)
- standard ICT tools such as Email, secure filestore and calendars.
- access to key information through the MySouthampton Student Mobile Portal which delivers timetables, Module information, Locations, Tutor details, Library account, bus timetables etc. while you are on the move.
- IT support through a comprehensive website, telephone and online ticketed support and a dedicated helpdesk in the Student Services Centre
- Enabling Services offering assessment and support (including specialist IT support) facilities if you have a disability, dyslexia, mental health issue or specific learning difficulties
- the Student Services Centre (SSC) to assist you with a range of general enquiries including financial matters, accommodation, exams, graduation, student visas, ID cards
- Career Destinations, advising on job search, applications, interviews, paid work, volunteering and internship opportunities and getting the most out of your extra-curricular activities alongside your degree programme when writing your CV
- a range of personal support services : mentoring, counselling, residence support service, chaplaincy, health service
- a Centre for Language Study, providing assistance in the development of English language and study skills for non-native speakers.

The Students' Union provides

- an academic student representation system, consisting of Course Representatives, Academic Presidents, Faculty Officers and the Vice-President Education; SUSU provides training and support for all these representatives, whose role is to represent students' views to the University.
- opportunities for extracurricular activities and volunteering
- an Advice Centre offering free and confidential advice including support if you need to make an academic appeal
- support for student peer-to-peer groups, such as Nightline

Associated with your programme, you will be able to access:

- the tutorial system – every student has a Personal Tutor, and there is also the Senior Tutoring team if your personal tutor is not available (see the ***FPSE Student Handbook*** for further details on the personal tutor system)
- Faculty computer workstations with a range of software, manuals and books, with early to late access through a card-lock mechanism
- Student Teaching and Computing Support (STACS) helpdesk for computer support and programming advice
- postgraduate demonstrators, who support programming intensive modules
- a website with notes for every module
- the ***FPSE Student Handbook***
- an Industrial Studies Tutor; students taking a year in industry as part of the "with Industrial Studies" variant will be allocated to an industrial studies tutor, who will be responsible for ensuring that project work is at a suitable level, and for liaison between the host company and the University.

Methods for evaluating the quality of teaching and learning

You will have the opportunity to have your say on the quality of the programme in the following ways:

- Completing student evaluation questionnaires for each module of the programme, which feed into Faculty-level module and programme reporting
- Acting as a student representative on various committees, e.g. Staff-Student Liaison Committees, Faculty Programmes Committee OR providing comments to your student representative to feed back on your behalf
- Serving as a student representative on Faculty Scrutiny Groups for programme validation
- Taking part in programme validation meetings by joining a panel of students to meet with the Faculty Scrutiny Group

The ways in which the quality of your programme is checked, both inside and outside the University, are:

- Regular module and programme reports which are monitored by the Faculty
- Programme validation, normally every five years
- External examiners, who produce an annual report
- Professional body accreditation
- A national research evaluation (which is relevant because our research activity contributes directly to the quality of your learning experience)
- Higher Education Review by the Quality Assurance Agency

Further details on the University's quality assurance processes are given in the ***Quality Handbook***.

Criteria for admission

The University's Admissions Policy applies equally to all programmes of study. The following are the typical entry criteria to be used for selecting candidates for admission. The University's approved equivalencies for the requirements listed below will also be acceptable.

Undergraduate programmes

Qualification	Grades	Subjects required	Subjects not accepted	EPQ Alternative offer (if applicable)	Contextual Alternative offer (if applicable)
GCE A level	AAA (BEng) A*AA (MEng)	A in Mathematics			
GCSE					
BTEC	Distinctions in Key topics and Merits in most other subjects plus A in A level Maths				
International Baccalaureate	37 points overall with 18 at Higher Level including 6 in Maths at HL (BEng) 38 points overall with 18 at Higher Level including 6 in Maths at HL (MEng)				

Postgraduate programmes

Qualification	Grade/GPA	Subjects requirements	Specific requirements
Bachelor's degree	N/A	N/A	N/A
Master's degree	N/A	N/A	N/A

Mature applicants

Applications from mature students (over 21 years in the October of the year of entry) are welcome. Applications will be considered on an individual basis.

English Language Proficiency

Overall	Reading	Writing	Speaking	Listening
6.5	5.5	5.5	5.5	5.5

Career Opportunities

Graduates from our undergraduate computer science and software engineering programme are employed worldwide in development and consultancy roles by a number of leading companies at the forefront of information technology, some have gone on to doctoral study and University careers, while others have been involved in IT start-ups. ECS runs a dedicated ***Careers Hub*** which is affiliated with over 100 renowned companies, including IBM, ARM, Microsoft Research, Imagination Technologies, Nvidia, Samsung and Google to name a few, and we hold our own annual Engineering and Technology Careers Fair.

External Examiner(s) for the programme

Name: Professor Georg Struth (Parts III and IV)
Institution: University of Sheffield

Name: Dr Antony Beaumont (Parts I and II)
Institution: Aston University

Students must not contact External Examiner(s) directly, and external examiners have been advised to refer any such communications back to the University. Students should raise any general queries about the assessment and examination process for the programme with their Course Representative, for consideration through Staff: Student Liaison Committee in the first instance, and Student representatives on Staff: Student Liaison Committees will have the opportunity to consider external examiners' reports as part of the University's quality assurance process.
External examiners do not have a direct role in determining results for individual students, and students wishing to discuss their own performance in assessment should contact their personal tutor in the first instance.

Please note: This specification provides a concise summary of the main features of the programme and the learning outcomes that a typical student might reasonably be expected to achieve and demonstrate if s/he takes full advantage of the learning opportunities that are provided. More detailed information can be found in the programme handbook at http://www.fpse.soton.ac.uk/student_handbook

Appendix 1

Programme Learning Outcome Mapping: Core and Compulsory Modules

		Knowledge and Understanding								Subject Specific Intellectual and Research Skills									Transferable and Generic Skills									
Code	**Module Title**	**A1**	**A2**	**A3**	**A4**	**A5**	**A6**	**A7**	**A8**	**B1**	**B2**	**B3**	**B4**	**B5**	**B6**	**B7**	**B8**	**B9**	**C1**	**C2**	**C3**	**C4**	**C5**	**C6**	**C7**	**C8**	**C9**	**C10**
COMP1215	Foundations of Computer Science	•																					•					
COMP1202	Programming I	•									•													•				
COMP1203	Computer Systems I	•						•					•											•				
COMP1205	Professional Development	•										•		•	•	•	•		•			•			•	•		
COMP1201	Algorithmics	•																					•					
COMP1206	Programming II	•									•													•				
COMP1216	Software Modelling and Design	•						•		•	•	•											•					
COMP1204	Data Management	•									•												•	•				
COMP2207	Distributed Systems and Networks	•			•						•		•															
COMP2209	Programming III	•									•													•				
COMP2208	Intelligent Systems	•		•							•												•	•				
COMP2210	Theory of Computing	•																					•					
COMP2211	Software Engineering Group Project	•								•	•	•							•		•			•				
COMP2212	Programming Language Concepts	•									•													•				
COMP2213	Interaction Design	•				•					•													•				
COMP2214	Advanced Software Modelling and Design	•	•					•																				
COMP2215	Computer Systems II	•					•	•																				
COMP3200	Individual Project		•	•	•	•	•	•		•	•	•	•	•	•		•		•	•		•		•	•			
COMP6224	Foundations of Cyber Security	•						•		•			•	•	•	•	•			•					•			
COMP6228	Individual Research Project	•	•	•	•	•	•	•					•	•	•	•	•	•	•		•	•			•		•	
COMP3219	Engineering Management and Law	•										•			•	•	•											
ELEC3200	Industrial Studies								•					•	•	•	•									•		•
ELEC6200	Group Design Project							•		•	•	•	•	•	•	•	•	•	•	•	•	•		•	•		•	

Programme Learning Outcome Mapping: Part III Optional Modules

		Knowledge and Understanding								Subject Specific Intellectual and Research Skills								Transferable and Generic Skills									
Code	**Module Title**	**A1**	**A2**	**A3**	**A4**	**A5**	**A6**	**A7**	**A8**	**B1**	**B2**	**B3**	**B4**	**B5**	**B6**	**B7**	**B8**	**B9**	**C1**	**C2**	**C3**	**C4**	**C5**	**C6**	**C7**	**C8**	**C9**	**C10**
COMP3207	Cloud Application Development	●	●		●		●				●										●	●		●				
COMP3204	Computer Vision	●		●		●					●			●							●		●	●				
COMP3201	Cyber Security	●	●		●		●	●							●	●	●							●				
COMP3206	Machine Learning	●		●																			●	●				
COMP3215	Real Time Computing and Embedded Systems	●	●		●		●	●									●							●				
ELEC3201	Robotic Systems	●		●							●												●					
COMP3203	Serious Games and eLearning	●				●					●			●	●	●					●	●						
COMP3208	Social Computing	●													●	●						●		●				
ELEC3219	Advanced Computer Architecture	●					●	●						●										●				
COMP3210	Advanced Computer Networks	●			●		●	●			●		●	●										●				
COMP3211	Advanced Databases	●	●								●		●	●										●				
COMP3212	Computational Biology	●		●										●									●	●				
COMP3214	Principles and Practice of Computer Graphics	●				●					●												●	●				
COMP3216	Safety-Critical Systems	●	●				●	●			●				●	●	●											
COMP3217	Secure Systems	●					●	●								●	●							●				

Programme Learning Outcome Mapping: Part IV Optional Modules

		Knowledge and Understanding								Subject Specific Intellectual and Research Skills									Transferable and Generic Skills									
Code	**Module Title**	**A1**	**A2**	**A3**	**A4**	**A5**	**A6**	**A7**	**A8**	**B1**	**B2**	**B3**	**B4**	**B5**	**B6**	**B7**	**B8**	**B9**	**C1**	**C2**	**C3**	**C4**	**C5**	**C6**	**C7**	**C8**	**C9**	**C10**
COMP6219	Designing Usable and Accessible Technologies	●	●			●								●	●	●	●					●			●			
COMP6202	Evolution of Complexity	●		●							●		●							●			●					
WEBS6201	Foundations of Web Science	●												●	●	●						●			●			
COMP6203	Intelligent Agents	●		●							●		●	●						●			●	●				
COMP6204	Software Project Management and Development	●	●									●			●	●	●					●						
COMP6218	Web Architecture	●			●		●	●			●		●	●						●	●			●				
COMP6205	Web Development	●	●		●		●	●		●	●		●				●			●				●				
ELEC6245	Wireless Networks	●			●		●	●			●		●	●						●	●	●	●	●	●			
COMP6228	Individual Research Project	●	●	●	●	●	●	●					●	●	●	●	●	●	●			●			●		●	
COMP6206	Advanced Computer Vision	●		●		●					●		●	●							●	●	●	●				
COMP6207	Advanced Intelligent Agents	●		●									●	●						●			●					
COMP6208	Advanced Machine Learning	●		●							●		●	●						●		●	●	●	●			
COMP6209	Automated Code Generation	●	●								●		●							●				●				
ELEC6212	Bio-Inspired Robotics	●		●							●		●	●						●	●	●	●	●	●			
COMP6212	Computational Finance	●		●							●		●			●				●			●	●				
ELEC6242	Cryptography	●			●		●	●					●	●	●	●	●			●		●	●	●				
COMP6201	E-Business Strategy	●	●							●	●		●	●	●	●	●			●	●	●			●			
ELEC6213	Image Processing	●		●		●								●									●					
COMP6214	Open Data Innovation	●					●			●	●		●	●						●	●	●		●				
COMP6215	Semantic Web Technologies	●		●						●	●		●	●						●			●	●				
COMP6216	Simulation Modelling for Computer Science	●		●							●		●	●						●	●	●	●	●				
COMP6217	The Science of Online Social Networks	●								●	●		●	●	●	●				●	●	●		●				
COMP6237	Software Engineering and Cyber Security	●						●		●	●	●	●	●	●	●	●			●				●				
COMP6211	Biometrics	●						●		●	●				●	●							●	●				
COMP6239	Data Mining	●								●	●			●	●	●				●			●	●				
CRIM6008	Cyber Crime, Insecurity and the Dark Web	●						●		●				●	●	●		●	●	●	●	●			●		●	

QAA Subject Benchmark Topic Mapping

The following table shows the mapping of modules (including optional modules) to the body of knowledge identified in the Subject Benchmark for Computer Science.

Code	Module Title	Type	Topic
COMP1215	Foundations of Computer Science	●	Theoretical Computing
COMP1202	Programming I	●	Programming Fundamentals
COMP1203	Computer Systems I	●	Architecture
COMP1205	Professional Development	●	Professionalism
COMP1201	Algorithmics	●	Data Structures and Algorithms
COMP1206	Programming II	●	Programming Fundamentals
COMP1216	Software Modelling and Design	●	Software Engineering
COMP1204	Data Management	●	Databases, Document Processing
COMP2207	Distributed Systems and Networks	○s	Computer Communications, Computer Networks, Distributed Computing Systems
COMP2209	Programming III	○	Programming Fundamentals
COMP2208	Intelligent Systems	○s	Artificial Intelligence, Intelligent Information Systems Technologies
COMP2210	Theory of Computing	○	Theoretical Computing
COMP2211	Software Engineering Group Project	○	Software Engineering
COMP2212	Programming Language Concepts	○	Comparative Programming Languages, Concurrency and Parallelism
COMP2213	Interaction Design	○s	Human-Computer Interaction, Multimedia
COMP2214	Advanced Software Modelling and Design	○s	Software Engineering
COMP2215	Computer Systems II	○s	Operating Systems
COMP3200	Individual Project	●s	Management Issues, Professionalism, Systems Analysis and Design
COMP3219	Engineering Management and Law	○	Management Issues, Professionalism
COMP3207	Cloud Application Development	s	Comparative Programming Languages, Middleware, Web-Based Computing
COMP3204	Computer Vision	s	Computer Vision and Image Processing
COMP3201	Cyber Security	s	Security and Privacy
COMP3206	Machine Learning	s	Artificial Intelligence
COMP3215	Real Time Computing and Embedded Systems	s	Architecture, Operating Systems
ELEC3201	Robotic Systems	s	Artificial Intelligence
COMP3203	Serious Games and eLearning	s	e-Business, Human-Computer Interaction
COMP3208	Social Computing		Human-Computer Interaction
ELEC3219	Advanced Computer Architecture	s	Architecture
COMP3210	Advanced Computer Networks	s	Computer Communications, Computer Networks
COMP3211	Advanced Databases	s	Databases, Information Retrieval
COMP3212	Computational Biology	s	Artificial Intelligence, Intelligent Information Systems Technologies
COMP3214	Principles and Practice of Computer Graphics	s	Graphics and Sound
COMP3216	Safety-Critical Systems	s	Software Engineering, Systems Analysis and Design
COMP3217	Secure Systems	s	Security and Privacy

Code	Module Title	Type	Topic
ELEC3200	Industrial Studies	(●)	Management Issues, Professionalism
ELEC6200	Group Design Project	●	Management Issues, Professionalism, Systems Analysis and Design
COMP6219	Designing Usable and Accessible Technologies	s	Human-Computer Interaction
COMP6202	Evolution of Complexity	s	Artificial Intelligence
WEBS6201	Foundations of Web Science		Information Systems, Web-Based Computing
COMP6203	Intelligent Agents	s	Artificial Intelligence
COMP6204	Software Project Management and Development	s	Management Issues, Software Engineering
COMP6218	Web Architecture	s	Document Processing, Middleware, Web-Based Computing
COMP6205	Web Development	s	Web-Based Computing
ELEC6245	Wireless Networks	s	Computer Communications, Computer Networks
COMP6228	Individual Research Project	s	
COMP6206	Advanced Computer Vision	s	Computer Vision and Image Processing
COMP6207	Advanced Intelligent Agents	s	Artificial Intelligence
COMP6208	Advanced Machine Learning	s	Artificial Intelligence
COMP6209	Automated Code Generation	s	Compilers and Syntax-Directed Tools
ELEC6212	Bio-Inspired Robotics	s	Artificial Intelligence
COMP6212	Computational Finance	s	Artificial Intelligence
ELEC6242	Cryptography	s	Security and Privacy
COMP6201	E-Business Strategy	s	e-Business
ELEC6213	Image Processing	s	Computer Vision and Image Processing
COMP6214	Open Data Innovation	s	Web-Based Computing
COMP6215	Semantic Web Technologies	s	Artificial Intelligence, Intelligent Information Systems Technologies, Web-Based Computing
COMP6216	Simulation Modelling for Computer Science	s	Simulation and Modelling
COMP6217	The Science of Online Social Networks	s	Web-Based Computing
COMP6224	Foundations of Cyber Security	○s	Security and Privacy
COMP6236	Software Engineering and Cyber Security	s	Security and Privacy, Software Engineering
COMP6239	Data Mining		Artificial Intelligence, Databases, Information Retrieval, Security and Privacy
CRIM6008	Cyber Crime, Insecurity and the Dark Web	s	Security and Privacy
COMP6211	Biometrics		Security and Privacy, Computer Vision and Image Processing

● indicates a core module (must be taken and passed)
(●) indicates a core module (must be taken and passed) for the “with Industrial Studies” degree
○ indicates a compulsory module (must be taken)
s indicates a specialist module that counts towards the requirements for some themed (“with X”) degree

Assessment Mapping – Part I

The following table summarises the assessment methods used for core and compulsory modules in Part I:

Code	Module Title	ECTS	Coursework 1	Coursework 2	Coursework 3	Coursework 4	Coursework 5	Examination
COMP1215	Foundations of Computer Science	7.5	25% 5x homework assignments					75% 2 hours
COMP1202	Programming I	7.5	30% programming exercise	20% laboratory work				50% 3 hours
COMP1203	Computer Systems I	7.5	25% laboratory work					75% 2 hours
COMP1205	Professional Development	7.5	5% curriculum vitae	10% online quiz	5% annotated bibliography	15% technical report	15% group presentation	50% 1.5 hours
COMP1201	Algorithmics	7.5	25% assessed tutorials					75% 2 hours
COMP1206	Programming II	7.5	40% programming exercise	35% programming exercise	25% laboratory work			None
COMP1216	Software Modelling and Design	7.5	15% group analysis and modelling	15% group design-to-code				70% 2 hours
COMP1204	Data Management	7.5	15% database programming	15% UNIX shell programming				70% 2 hours

Assessment Mapping – Part II

The following table summarises the assessment methods used for core and compulsory modules in Part II:

Code	Module Title	ECTS	Coursework 1	Coursework 2	Coursework 3	Coursework 4	Coursework 5	Examination
COMP2207	Distributed Systems and Networks	7.5	10% exercise	10% exercise	30% implementation exercise			50% 1.5 hours
COMP2209	Programming III	7.5	30% programming exercise	35% programming exercise				35% 1 hours
COMP2208	Intelligent Systems	7.5	25% search method exercise					75% 2 hour
COMP2210	Theory of Computing	7.5	40% 4x in-class tests					60% 2 hours
COMP2211	Software Engineering Group Project	7.5	15% D1: envisioning	15% D2: first increment	15% D3: second increment	15% D4: third increment	40% D5: report	None
COMP2212	Programming Language Concepts	7.5	25% language design exercise					75% 2 hours
COMP2213	Interaction Design	7.5	50% interaction design exercise					50% 2 hours
COMP2214	Advanced Software Modelling and Design	7.5	25% modelling exercise					75% 2 hours
COMP2215	Computer Systems II	7.5	20% 10x exercises	5% additional contributions				75% 2 hours
COMP2216	Principle of Cyber Security	7.5	30% Literature Review					70% 2 hours

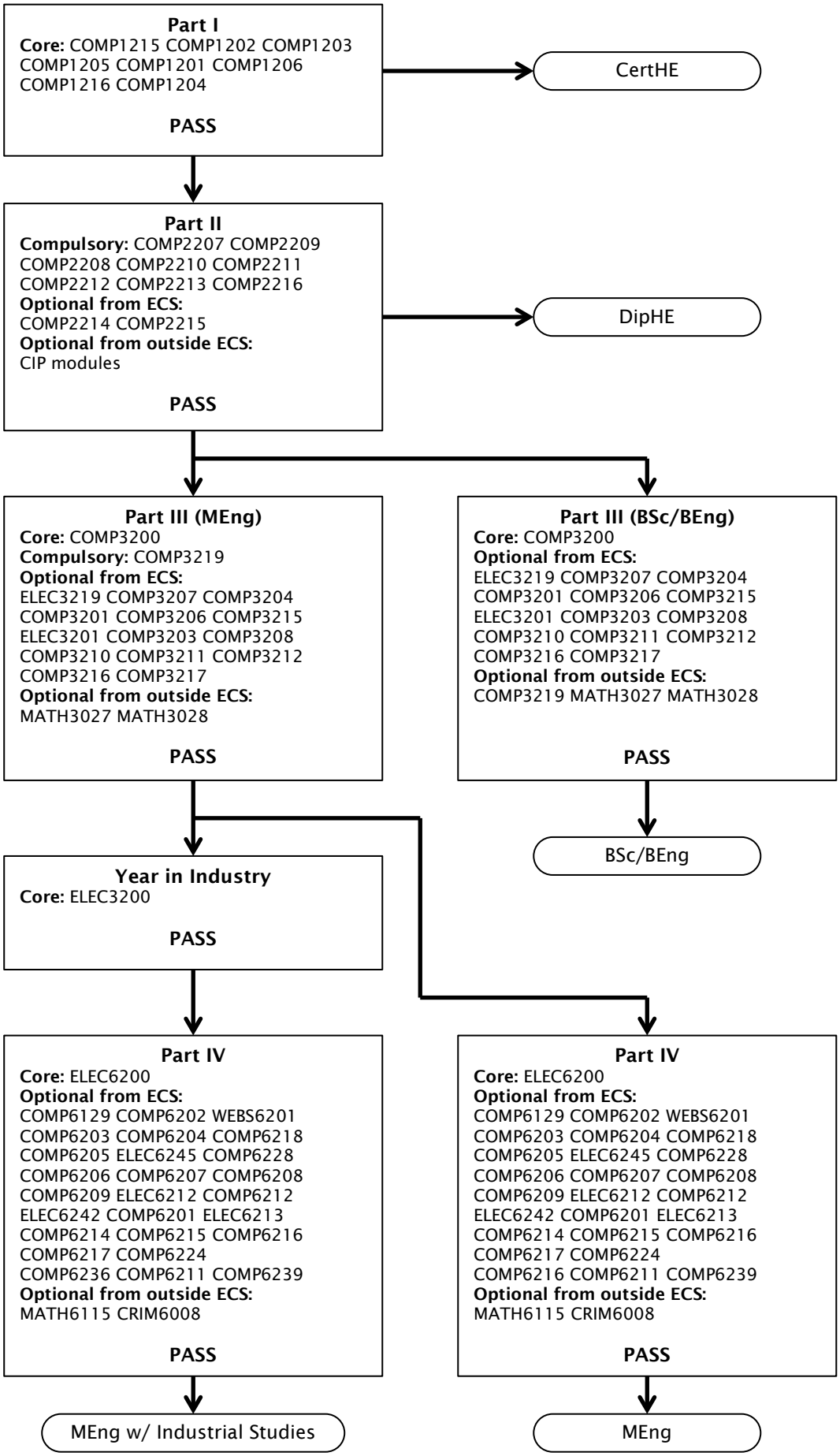
Assessment Mapping – Parts III and IV

The following table summarises the assessment methods used for core and compulsory modules in Parts III and IV:

Code	Module Title	ECTS	Coursework 1	Coursework 2	Coursework 3	Coursework 4	Coursework 5	Examination
COMP3200	Individual Project	22.5	10% progress report	80% final report	10% viva			None
COMP6224	Foundations of Cyber Security	7.5	15% threat analysis	15% case study				70% 2 hours
COMP6228	Individual Research Project	7.5	75% research paper	25% poster				None
COMP3219	Engineering Management and Law	7.5	33% accounting coursework	33% law coursework	33% management coursework			None
ELEC3200	Industrial Studies	30	15% mid-term report	55% placement report	20% oral examination	10% poster		None
ELEC6200	Group Design Project	22.5	50% group report	10% group presentation	10% individual reflection	30% individual report/poster		None

Computer Science and Software Engineering Programme Structure

Note that, for clarity, this overview of the programme structure does not detail the differences between the specialist themed degrees; for these, see the detailed programme structure on pp. 8-14.



Appendix 2:

Additional Costs

Students are responsible for meeting the cost of essential textbooks, and of producing such essays, assignments, laboratory reports and dissertations as are required to fulfil the academic requirements for each programme of study. In addition to this, students registered for this programme typically also have to pay for the items listed in the table below.

In some cases you'll be able to choose modules (which may have different costs associated with that module) that will change the overall cost of a programme to you. Details of such costs will be listed in the Module Profile. Please also ensure you read the section on additional costs in the University's ***Fees, Charges and Expenses Regulations*** in the University Calendar.

Main Item	Sub-section	Programme-specific Costs
Approved Calculators		Candidates may use calculators in the examination room only as specified by the University and as permitted by the rubric of individual examination papers. The University approved models are Casio FX-570 and Casio FX-85GT Plus. These may be purchased from any source and no longer need to carry the University logo.
Stationery		You will be expected to provide your own day-to-day stationary items, e.g. pens, pencils, notebooks, etc). Any specialist stationery items will be specified under the Additional Costs tab of the relevant module profile.
Textbooks		Where a module specifies core texts these should generally be available on the reserve list in the library. However due to demand, students may prefer to buy their own copies. These can be purchased from any source. Some modules suggest reading texts as **optional** background reading. The library may hold copies of such texts, or alternatively you may wish to purchase your own copies. Although not essential reading, you may benefit from the additional reading materials for the module.
Equipment and Materials Equipment	Art Equipment and Materials: Drawing paper; painting materials; sketchbooks	
	Art Equipment and Materials: Fabric, Thread, Wool	
	Design equipment and materials:	
	Excavation equipment and materials:	
	Field Equipment and Materials:	
	Laboratory Equipment and Materials:	
	Medical Equipment and Materials: Fobwatch; stethoscopes;	
	Music Equipment and Materials	
	Photography:	
	Recording Equipment:	

Main Item	Sub-section	Programme-specific Costs
IT	Computer Discs	
	Software Licenses	
	Hardware	
Clothing	Lab Coats	
	Protective Clothing: Hard hat; safety boots; hi-viz vest/jackets;	
	Fieldcourse clothing:	
	Wet Suits?	
	Uniforms?	
Printing and Photocopying Costs		In the majority of cases, coursework such as essays; projects; dissertations is likely to be submitted on line. However, there are some items where it is not possible to submit on line and students will be asked to provide a printed copy.
Fieldwork: logistical costs	Accommodation:	
	Insurance	
	Travel costs	
	Immunisation/vaccination costs	
	Other:	
Placements (including Study Abroad Programmes)	Accommodation	
	Insurance	
	Medical Insurance	
	Travel costs	
	Immunisation/vaccination costs	
	Disclosure and Barring Certificates or Clearance	
	Translation of birth certificates	
	Other	
Conference expenses	Accommodation	
	Travel	
Optional Visits (e.g. museums, galleries)		
Professional Exams		
Parking Costs		
Anything else not covered elsewhere		

Changes

Date	Comments
9 Mar 2015	Added COMP3218, COMP6234
8 Jun 2015	Additions for MEng CS w/ Cyber Security
19 Jun 2015	Amendments for MEng CS w/ Cyber Security
9 Sep 2015	Update to Programme Overview (CMA Changes)
14 Jan 2016	Amendments for MEng CS w/ Cyber Security
2 Feb 2016	Changes for 16-17 academic year
19 May 2016	Changes for GCHQ certification of CS w/ Cyber Security
17 June 2016	Further changes for GCHQ certification of CS w/ Cyber
12 August 2016	Minor clarifications to text
16 August 2016	COMP6210 removed for 16/17
07 December 2016	Optional module viability
08 March 2017	1718 FPC approval
24 April 2017	CQA removal of suspended optional module MATH6134
13 June 2017	CQA removed COMP3201 and COMP6224, and updated COMP6230 as a compulsory module in line with previously submitted GCHQ requirements. ELEC6242 removed from Part 3 – remains in Part 4. CQA removed COMP3203 and COMP3216 suspended modules.
07 December 2017	CQA Team: FPC approved optional module size caveat.