

Programme Specification

MEng Chemical Engineering (2021-22)

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	4
Accreditation details	
Final award	Master of Engineering (MEng)
Name of Award	MEng Chemical Engineering MEng Chemical Engineering MEng Chemical Engineering with Industrial Placement
Interim Exit awards	Bachelor of Engineering with Honours (BEng (Hons)) Bachelor of Science (Ordinary) Certificate of Higher Education (CertHE) Diploma of Higher Education (DipHE)
FHEQ level of final award	Level 7
UCAS code	H801 MEng Chemical Engineering H803 MEng Chemical Engineering with Industrial Placement
Programme Code	8751 MEng Chemical Engineering 8752 MEng Chemical Engineering with Industrial Placement
QAA Subject Benchmark or other external reference	
Programme Lead	Mohamed Sayed Hassan
Pathway Lead	

Programme Overview

Brief outline of the programme

Climate change, the demands of growing populations, and our impact on the world require a move to more sustainable approaches presenting new challenges to Chemical Engineering. The Chemical Engineering degree programmes at the University of Southampton have this sustainability embedded throughout and will prepare our graduates to meet these challenges. Combining a solid foundation in Chemical Engineering with a knowledge of modern Chemistry the programmes will produce graduates that are able to meet the expectations of the industries of the future.

Brief outline of the programme

The aim of the range of the Southampton Chemical Engineering programmes is to help you develop the necessary academic background for a career as a professional engineer in the industrial, consulting, and academic sectors. You will gain skills that enable you to address problems covering the design, construction, maintenance, and operation of a wide range of systems and the understanding required to work at the interface of engineering and the chemical sciences, providing you with the depth of knowledge required to meet the challenges of industry and research in the 21st century. Chemical engineering is a very broad-based discipline and the range of units and options on offer highlight this flexibility and emphasise your ability to define the focus of your studies as you progress through the programme. The structure of the programmes allows you to choose specialist optional units yet at the same time provides a common framework that ensures all aspects of

core Chemical Engineering are covered.

The first two years consider the fundamentals of Chemical Engineering. These two years are common for the BEng and MEng programmes. As you move through the programme the application of the knowledge and skills you have developed becomes a feature. Design is the connecting thread throughout the programme and ensures that you can apply your theoretical understanding to a wide range of real design problems, addressing issues of sustainability at all stages. In addition, computational methods are used throughout to provide the tools necessary for the analysis of many different engineering problems and most modules include a laboratory component to allow you to put your theoretical understanding in context and develop your practical skills. Specialist knowledge is available through optional module choices in the third and fourth year and includes further emphasis on sustainability. The programmes are designed in accordance with the Engineering Council requirements as a pathway, to become a Chartered professional engineer. The MEng fully meets the educational requirements for Chartered Engineers status; the BEng is recognised as meeting the requirements in part and would need to be combined with suitable further learning.

The course aims to equip students to work as professional Chemical Engineers, bringing together the major components of Chemical Engineering (material and energy balances, heat and mass transfer phenomena, thermodynamics, process control and safety, unit operations, reaction engineering and catalysis, health, safety and the environment, and process modelling and simulation) with the essential components of the chemical sciences (molecular structure, synthesis and mechanisms, chemical kinetics, and materials characterisation). The course reflects current industry requirements, as well as the MEng degree teaching and learning requirements in Chemical Engineering. Both the BEng and MEng programmes have been designed to meet the requirements of the Institution of Chemical Engineers (IChemE), with the MEng meeting the F-level requirements.

In broad terms, the course aims to provide a challenging and stimulating study environment in which students can:

- Develop knowledge and understanding of the underpinning engineering science, mathematics and applied sciences essential for a Chemical Engineer.
- Develop the analytical skills used by Chemical Engineers to solve problems across a range of applications.
- Develop competence in engineering design.
- Appreciate and understand the economic, social and environmental context in which a chemical engineer will work.
- Gain experience of engineering practice through work in laboratories, fieldwork and individual & group projects.
- Gain exposure to niche research areas built on a strong core of engineering fundamentals;
- Acquire the skills required to apply systems-level thinking of engineering from molecules to large scale systems, whilst fostering safe and good laboratory practices;
- Demonstrate their ability to think for themselves and develop a social awareness of the impact of chemical engineering on society, focussing on social, economic and environmental aspects.
- Acquire the skills required to deal with uncertainty and complexity in problem solving.
- Develop the skills required to approach new problems in an innovative manner and to design innovative approaches to existing engineering problems.
- Gain an understanding of advanced chemical engineering topics, through the selection of optional modules and an individual research project.
- Choose from a range of options to allow them to pursue fields of particular interest.
- Develop a range of key transferable skills.

Your contact hours will vary depending on your module/option choices. Full information about contact hours is provided in individual module profiles.

Learning and teaching

The teaching and learning strategy takes into consideration the learning outcomes that need to be achieved, progression through the levels of study, and the nature of the subject. One of the goals of Higher Education is that students develop lifelong learning skills and are increasingly able to take greater responsibility for their own learning as they progress through the programme.

The teaching and learning methods have been selected to engage students in developing their knowledge and understanding of engineering fundamentals, chemical engineering through formal learning opportunities such as lectures and tutorials, experiential learning through practical classes and lab sessions and informal and social

learning through team-working in projects and presentations. The first year develops the core of Chemical Engineering with the second year adding depth and breadth to this knowledge allowing the move towards theme specific applications. In the third year, specialist, discipline-specific knowledge is added to allow the student to achieve breadth across multiple subject areas and to develop an increasing element of independent learning. Also in the third year allows students to demonstrate their ability to work as part of a team on an industrially-focused design project. The final MEng year emphasises the commercial application of learning in highly specialised subjects and allows students to demonstrate their independence through completion of an extended research project. Acquisition of core knowledge and understanding is through lectures, seminars, tutorials, laboratory classes, workshops, and independent study and research. Students are encouraged from an early stage to supplement and consolidate their understanding and knowledge by independent study.

Assessment

Assessment

The teaching and learning strategy is designed to prepare students for their professional careers in industry, academic research or entrepreneurship. The assessment methods incorporate a wide range of different methodologies designed to meet the needs of industry and the accrediting bodies, as well as prepare students for potential academic research careers.

Assessment is a key part of the learning process, as it is only through challenging students to express what they have learned or put it to practical use that they can complete the learning journey and assess for themselves if they have understood what they have been taught and are able to apply and use that skills and knowledge. There are two forms of assessment: formative and summative. Formative assessment provides an opportunity the academic staff to give students feedback during their learning. This feedback is designed to help and guide students learning. All the modules will have some formative assessment and this may be in various forms, including discussions or questioning from the supervisor, tests, and practical activities. These formative activities are crucial if students are to make best use of their learning experience and they are designed to prepare students for their summative assessment. Summative assessment is focussed on the assessment and evaluation of the students and consists of grading the students' work on the different modules. Details of this assessment will be made available from the beginning of the module so that students understand how their grades will be determined.

Testing of the knowledge and skills development is through a combination of unseen written examinations and assessed coursework in the form of exercises, laboratory reports, design exercises, essays and individual and group projects.

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.

Special Features of the programme

- 1- Bespoke chemical engineering laboratories
- 2- Virtual control room simulating real life processes
- 3- Dedicated chemical engineering computer suite complete with simulation software

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Programmes and major changes to programmes are approved through the University's [programme validation process](#) which is described in the University's [Quality handbook](#).

Educational Aims of the Programme

Educational Aims of the Programme

The underlying philosophy of this programme is to provide a sound engineering educational base for students with an interest in Chemical Engineering and the aspiration to reach Chartered Engineer status and equally enable them to integrate into the job market swiftly and effectively. The proposed programme structure has been developed in line with the requirements of the potential employers within the sector and the internationally recognised professional bodies such as the IChemE (Institute of Chemical Engineers). The proposed programme is also compatible with similar courses offered by other institutions in the UK.

Reference Points:

The scholarship, sector experience and research expertise of academic members of staff and the industrial board

Curricula Framework Documentation at the University of Southampton

QAA UK Quality Code for Higher Education

Framework for Higher Education Qualifications (FHEQ),

National Qualifications Framework

Engineering Benchmark Statement

UK Standard for Professional Engineering Competence (UK-SPEC)

University policy on key skills

Industrial guidelines for accredited programmes in Chemical Engineering - IChemE (Institute of Chemical Engineers)

The programme intends to:

Develop graduates with education in engineering fundamentals and experience of interdisciplinary working.

Qualify graduates to develop the engineering, design, management and personal skills required to become professional Chemical Engineers equipped for a career as professionals.

Certificate progression to Chartered Membership of the IChemE and registration with ECUK as a chartered engineer in meeting educational requirements (in acquiescence with UK-SPEC) when combined with a period of further learning.

Deliver an inspiring programme in terms of technical breadth and depth as well as a holistic approach to incorporate transferable skills and business awareness in keeping UK-SPEC requirements of an accredited MEng programme.

Programme Learning Outcomes

Knowledge and Understanding

On successful completion of this programme you will have knowledge and understanding of:

- A1. Mathematical and analytical methods needed for engineering, design, processing and production calculations
- A2. Applied Chemistry, physical and natural sciences pertinent to chemical engineering
- A3. The selection of materials, processes, and methods of investigation, exploration, application and modelling within the context of chemical engineering
- A4. Application of the design process
- A5. The importance of business, commerce and marketing
- A6. The use and relevance of appropriate software
- A7. The significance of chemical engineering in society
- A8. The importance of ethics and impact on the environment
- A9. Extended knowledge and understanding of the essential facts, concepts, principles and theories of Chemical and Process Engineering
- A10. Advanced topics in Chemical Engineering and the research skills to independently acquire knowledge and develop understanding of unfamiliar topics and concepts.
- A11. The limits of current practices and available technology and the potential of new and emerging technology .

Subject Specific Intellectual and Research Skills

On successful completion of this programme you will be able to:

- B1. Select and apply knowledge of engineering and chemical principles and analytical techniques (including mathematical methods) to the solution of problems
- B2. Use a range of problem-solving techniques to develop innovative solutions
- B3. Use a holistic approach in design and solving problems, by applying judgement to criteria including risk, cost, safety and the environment
- B4. Develop an awareness of the effects upon society of technological developments and develop a proper sense of professional conduct in relation to society's use of technology
- B5. Develop critical skills with regard to literature searching, appraising and evaluating from a variety of sources and synthesising the results
- B6. Plan execute and report on laboratory experiments and final year projects
- B7. Identify the required cost, quality, safety, reliability, appearance, fitness for purpose and environmental impact of the application of the design and assess commercial risk
- B8. Project manage a task
- B9. Determine the criteria for evaluating a design solution and evaluate an outcome of the design against the original specification
- B10. Investigate specific aspects of design in depth
- B11. Handle uncertainty and complexity in problem solving.
- B12. Design innovative approaches to existing and new problems.

Transferable and Generic Skills

On successful completion of this programme you will be able to:

- C1. Communicate effectively in writing, speaking and in appropriate forms of presentation
- C2. Read and understand documents related to engineering and software products and systems
- C3. Use information technology to handle data, for simulation and mapping and to assist with design and testing
- C4. Apply mathematical techniques in engineering design and professional practice
- C5. Assess problem domains and formulate appropriate problem-solving strategies
- C6. Work in teams to achieve goals but nevertheless be distinctively individual
- C7. Learn independently in familiar and unfamiliar situations with open-mindedness and in the spirit of critical enquiry
- C8. Learn effectively for the purpose of continuing professional development and in a wider context throughout their career

Subject Specific Practical Skills

On successful completion of this programme you will be able to:

- D1. Use standard and specialist laboratory instruments, conduct experiments and report on them
- D2. Apply relevant mathematical science-based methods in developing solutions to problems
- D3. Apply the design process to enable the selection of appropriate materials and processes
- D4. Communicate technical information in a lucid manner to both management and technical staff
- D5. Manage engineering science-based projects using appropriate tools
- D6. Think creatively in order to develop design and analytical solutions
- D7. Be creative in the solution of problems and in the development of designs
- D8. Critically evaluate designs and make improvements.
- D9. Integrate and evaluate information and data from a variety of sources by taking a holistic approach to solving problems and designing systems, applying professional judgements to balance risks, costs, benefits, safety, reliability, aesthetics and environmental impact
- D10. Demonstrate an ability to work with information that may be incomplete or uncertain, to quantify this uncertainty and to propose strategies that mitigate any deficiencies
- D11. Generate innovative designs for processes, systems, and products to fulfil new needs.

Learning Outcomes

- LO1. *(For MEng Chemical Engineering with Industrial Placement only)* Demonstrate knowledge of industrial practice by means of a one-year placement which normally qualifies as part of the training and

- experience requirements for Corporate Membership of the Institution of Chemical Engineers (MIChemE) and Chartered Engineer (CEng) status when combined with a period of further learning.
- LO2. *(For MEng Chemical Engineering with Industrial Placement only)* Analyse, evaluate and interpret information from projects and, apply theoretical knowledge in unfamiliar situations to solve problems
- LO3. *(For MEng Chemical Engineering with Industrial Placement only)* Exercise professional judgement in a working context, evaluate, and review performance in the context of an engineering workplace
- LO4. *(For MEng Chemical Engineering with Industrial Placement only)* Identify areas for personal and career development and how these can be addressed
- LO5. *(For MEng Chemical Engineering with Industrial Placement only)* Understand the different roles within a team and have the ability to exercise leadership and demonstrate effective understanding of time and project management skills
- LO6. *(For MEng Chemical Engineering with Industrial Placement only)* Apply knowledge and skills taking account of commercial and industrial constraints.
- LO7. *(For MEng Chemical Engineering with Industrial Placement only)* Understand the importance of health and safety in an engineering workplace and evidence continuous professional development by the use of a personal learning log

Programme Structure

The programme structure table is below:

Information about pre and co-requisites is included in individual module profiles.

Where optional modules have been specified, the following is an indicative list of available optional modules, which are subject to change each academic year. Please note in some instances modules have limited spaces available.

MEng Chemical Engineering Pathway

Part I

Part I Core

Code	Module Title	ECTS	Type
CHEM1xxA	Chemical Principles	7.5	Core
FEEG1001	Design and Computing	15	Core
MATH1054	Mathematics for Engineering and the Environment	7.5	Core
FEEG1002	Mechanics, Structures and Materials	15	Core
CHEG1XXA	Principles of Chemical Engineering	7.5	Core
FEEG1003	ThermoFluids	7.5	Core

Part II

Part II Compulsory

Code	Module Title	ECTS	Type
CHEM2xxA	Chemical Reactions	7.5	Compulsory
CHEG2XXD	Heat and Mass Transfer	7.5	Compulsory
MATH2048	Mathematics for Engineering and the Environment Part II	7.5	Compulsory
CHEG2XXE	Practical Operations and Chemical Analysis	7.5	Compulsory
CHEG2XXB	Process Control and Safety	7.5	Compulsory
CHEG2XXC	Reaction Engineering	7.5	Compulsory
CHEG2XXA1	Unit Operations 1 -Particle Technology	7.5	Compulsory
CHEG2XXA2	Unit Operations 2 -Fluid Technology	7.5	Compulsory

Part III

Part III Compulsory

Code	Module Title	ECTS	Type
CHEG3XXA	Advanced Reaction Engineering (Bio Reactors and Catalysis)	7.5	Compulsory
CHEG3XXB	Process Integration and Intensification	7.5	Compulsory
CHEG3XXC	Unit Operations 3- Separation Processes	7.5	Compulsory

Part III Core

Code	Module Title	ECTS	Type
CHEG3xxD	Chemical Engineering Group Design Project	22.5	Core

Part III Options Choose 2 Modules

Code	Module Title	ECTS	Type
CHEG3xxE	Chemical Engineering for Sustainable Energy	7.5	Optional
CHEG3xxZ	Chemical Engineering for the Pharmaceutical Sector	7.5	Optional
CENV3059	Urban Water and Wastewater Engineering	7.5	Optional

Part IV

Part IV Compulsory

Code	Module Title	ECTS	Type
CHEG6xxB	Designing for Scale: Commercialising Chemistry	7.5	Compulsory
CHEG6xxC	Management of Safety in Chemical Plants	7.5	Compulsory

Part IV Core

Code	Module Title	ECTS	Type
CHEG6xxA	Chemical Engineering Advanced Research Project	30	Core

Part IV Optional; Breadth
Choose 1 module

Code	Module Title	ECTS	Type
CENV6141	Bioenergy	7.5	Optional
	Chemical Engineering in Food Technology	7.5	Optional
	Molecular Modelling for Chemical Engineering	7.5	Optional
CENV6085	Waste Resource Management	7.5	Optional
CENV6158	Wastewater Process Engineering	7.5	Optional

Part IV Optional; Depth
Choose 1 module

Code	Module Title	ECTS	Type
CHEM6149	Principles, Techniques and Energy Applications of Electrochemistry	7.5	Optional
CHEG6xxD	Process Optimisation and Control	7.5	Optional
CHEM6158	Reaction Engineering in Micro- and Meso- Scale Flow	7.5	Optional

The programme structure table is below:

Information about pre and co-requisites is included in individual module profiles.

Where optional modules have been specified, the following is an indicative list of available optional modules, which are subject to change each academic year. Please note in some instances modules have limited spaces available.

MEng Chemical Engineering with Industrial Placement Pathway

Part I

Part I Core

Code	Module Title	ECTS	Type
CHEM1xxA	Chemical Principles	7.5	Core
FEEG1001	Design and Computing	15	Core
MATH1054	Mathematics for Engineering and the Environment	7.5	Core
FEEG1002	Mechanics, Structures and Materials	15	Core
CHEG1XXA	Principles of Chemical Engineering	7.5	Core
FEEG1003	ThermoFluids	7.5	Core

Part II

Part II Compulsory

Code	Module Title	ECTS	Type
CHEM2xxA	Chemical Reactions	7.5	Compulsory
CHEG2XXD	Heat and Mass Transfer	7.5	Compulsory
MATH2048	Mathematics for Engineering and the Environment Part II	7.5	Compulsory
CHEG2XXE	Practical Operations and Chemical Analysis	7.5	Compulsory
CHEG2XXB	Process Control and Safety	7.5	Compulsory
CHEG2XXC	Reaction Engineering	7.5	Compulsory

CHEG2XXA1	Unit Operations 1 -Particle Technology	7.5	Compulsory
CHEG2XXA2	Unit Operations 2 -Fluid Technology	7.5	Compulsory

Part III

Part III Compulsory

Code	Module Title	ECTS	Type
FEEG3009	Industrial Placement Year	0	Compulsory

Part IV

Part IV Compulsory

Code	Module Title	ECTS	Type
CHEG3XXA	Advanced Reaction Engineering (Bio Reactors and Catalysis)	7.5	Compulsory
CHEG3XXB	Process Integration and Intensification	7.5	Compulsory
CHEG3XXC	Unit Operations 3- Separation Processes	7.5	Compulsory

Part IV Core

Code	Module Title	ECTS	Type
CHEG3xxD	Chemical Engineering Group Design Project	22.5	Core

Part IV Options

Code	Module Title	ECTS	Type
CHEG3xxE	Chemical Engineering for Sustainable Energy	7.5	Optional
CHEG3xxZ	Chemical Engineering for the Pharmaceutical Sector	7.5	Optional
CENV3059	Urban Water and Wastewater Engineering	7.5	Optional

Part V

Part V Compulsory

Code	Module Title	ECTS	Type
CHEG6xxB Commercialisation	Designing for Scale: Commercialising Chemistry	7.5	Compulsory
CHEG6xxC	Management of Safety in Chemical Plants	7.5	Compulsory

Part V Core

Code	Module Title	ECTS	Type
CHEG6xxA	Chemical Engineering Advanced Research Project	30	Core

Part V Optional; Breadth

Code	Module Title	ECTS	Type
CENV6141	Bioenergy	7.5	Optional

	Chemical Engineering in Food Technology	7.5	Optional
	Molecular Modelling for Chemical Engineering	7.5	Optional
CENV6085	Waste Resource Management	7.5	Optional
CENV6158	Wastewater Process Engineering	7.5	Optional

Part V Optional; Depth

Code	Module Title	ECTS	Type
CHEM6149	Principles, Techniques and Energy Applications of Electrochemistry	7.5	Optional
CHEG6xxD	Process Optimisation and Control	7.5	Optional
CHEM6158	Reaction Engineering in Micro- and Meso- Scale Flow	7.5	Optional

Progression Requirements

The programme follows the University's regulations for [*Progression, Determination and Classification of Results : Undergraduate and Integrated Masters Programmes*](#) or [*Progression, Determination and Classification of Results: Postgraduate Master's Programmes*](#). Any exemptions or variations to the University regulations, approved by AQSC are located in [*section VI of the University Calendar*](#).

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 Hartley Library.
- Enabling Services offering support services and resources via a triage model to access crisis management, mental health support and counselling. Support includes daily Drop In at Highfield campus at 13.00 – 15.00 (Monday, Wednesday and Friday out of term-time) or via on-line chat on weekdays from 14.00 – 16.00. Arrangements can also be made for meetings via Skype.
- assessment and support (including specialist IT support) facilities if you have a disability, long term health problem or Specific Learning Difficulty (e.g. dyslexia)
- 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 and Employability services, 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.
- Other support that includes health services (GPs), chaplaincy (for all faiths) and 'out of hours' support for students in Halls and in the local community (18.00-08.00).
- 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.

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.
- Acting as a student representative on various committees, e.g. Staff/Student Liaison Committees, School Programmes Committee OR providing comments to your student representative to feedback 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.

Further details on the University's quality assurance processes are given in the [Quality handbook](#).

Career Opportunities

Students graduating from this degree programme will be qualified for a wide-range of careers, including those in the chemical engineering and process chemistry sectors.

Students are supported in their career goals through additional training in transferable/key skills and through active engagement with employers and the University Careers Office.

External Examiner(s) for the programme

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 Academic 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 they take full advantage of the learning opportunities that are provided. More detailed information can be found in the programme handbook.

Appendix 1:

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 also have to pay for:

Additional Costs

Type	Details
Accommodation and Travel	Industrial Placement year. You will need to find your own accommodation near to your place of work. You are responsible for travel and subsistence costs.
Approved Calculators	Students will require a scientific calculator. This will need to be purchased by the student. 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
Books and Stationery equipment	You will be expected to provide your own day-to-day stationery items, e.g. pens, pencils, notebooks, etc.). Any specialist stationery items will be specified under the Additional Costs tab of the relevant module profile.

In some cases you'll be able to choose modules (which may have different costs associated with that module) which 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 available at www.calendar.soton.ac.uk.