Programme Specification

Biomedical Electronic 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 BEng 4 Years MEng 5 Years MEng with Industrial Studies
Accreditation details	Accreditation will be sought from The Institution of Engineering and Technology (IET)
Final award	Master of Engineering (MEng)
Name of award	Biomedical Electronic Engineering
Interim Exit awards	Bachelor of Engineering (BEng) Bachelor of Engineering (BEng Ordinary) Diploma of Higher Education (DipHE) Certificate of Higher Education (CertHE)
FHEQ level of final award	Level 7
UCAS code	B90B MEng Biomedical Electronic Engineering MEng Biomedical Electronic Engineering with Industrial Studies BB90 BEng Biomedical Electronic Engineering
QAA Subject Benchmark or other external reference	Quality Assurance Agency (QAA) Engineering Benchmark QAA Framework for Higher Education Qualifications (FHEQ) Engineering Council (UK-SPEC)
Programme Lead	Daniel Spencer
Date specification was written	17/03/2016
Date specification last updates	07/12/2017

Programme Overview

Brief outline of the programme

This programme will provide you with a detailed knowledge of electronics and biomedicine, together with the ability to apply engineering principles to medicine and healthcare. The course has a strong emphasis on new technologies in bio-sensing, bio-signal analysis, bio-control and rehabilitation, and lab-on-a-chip diagnostic systems. In the first two years you will take core and compulsory modules in electronics together with a thorough grounding in mathematics, complemented by modules covering the fundamentals in Life Science. In year two, you will apply your knowledge to design a health and wellness monitoring platform within a healthcare technologies design project. In the third and fourth years, a mixture of optional and compulsory modules together with projects allows you to specialise within biomedical electronic engineering. In the fourth and final year of the MEng course, you will develop skills during a health care focused Group Design Project which is compulsory and taken over the full academic year.

At Southampton, we will ensure that you have a thorough grounding in a wide range of technologies. 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. All of these will stand you in good stead as you move into your career. We offer outstanding facilities in our labs, and teaching is based on the latest research. This approach ensures that at the end of your studies your skills will be highly regarded by leading employers. All of our programmes have a wide range of courses and modules to choose from, enabling you to specialise and focus in depth on what really interests you. Our “MEng Biomedical Electronic

Engineering with Industrial Studies" variant includes a year in industry, giving you additional experience and the opportunity to relate your academic skills and knowledge to contemporary industrial practice.

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

Feedback

A range of feedback methods are used on this programme to enable students to gauge their progress in meeting the intended learning outcomes, including:

- Feedback from your personal tutor
- Written feedback for large courseworks
- Instant oral feedback on presentations, tutorials and practical laboratories
- Feedback on the overall class performance in particular modules
- Marked coursework

Educational Aims of the Programme

The aims of the programme are to:

- Provide you with a sound foundation and to develop the skills, knowledge, and application required for a wide range of professional engineering careers as a high quality practitioner and leader in business, engineering, research and development, and industry.
- Provide a coherent and well balanced coverage of the theory, design and practical aspects of the subject based on mathematics, science and engineering, integrated with business and management.
- Have a flexible academic structure, which is relevant and attractive not only to you, but also to staff and industry, and which is responsive to progress and development in technology and the needs of the industrial and academic communities.

- Be at the leading edge of scholarship in biomedical electronic engineering.
- Maximise the benefit of an environment in which staff are carrying out internationally competitive and leading research across all aspects of electronics and life science.
- Provide an environment which contributes towards your personal and professional development and provides a foundation for a wide range of subsequent study and lifelong learning.
- Provide a well-found learning environment with sufficient laboratories containing appropriate equipment and facilities, up-to date CAD tools, 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 "MEng Biomedical Electronic Engineering with Industrial Studies" variant) Provide you with industrial experience, to enable you to relate your academic skills and knowledge to contemporary industrial practice.

Programme Learning Outcomes

Knowledge and Understanding

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

A1. Underpinning key mathematics and science skills appropriate to biomedical electronic engineering, both as a method for communicating results, concepts and ideas and as a tool for solving complex problems.

A2. Underpinning principles, methodologies and concepts applicable to biomedical electronic engineering, as well as their role in historical, current, and future developments and technologies.

A3. Practical, computational and programming skills relating to engineering, and compatible with current industrial practice.

A4. The development and evaluation of possible solutions to engineering problems.

A5. Major issues at the frontiers of engineering research and development, and their possible exploitation to enhance current practices.

A6. Financial, economic, social and ethical factors of significance to biomedical engineering, including the broader obligations of engineers to society.

If you are an MEng student, you will also be able to demonstrate knowledge and understanding of:

A7. How established techniques of research and enquiry are used to create and interpret knowledge in biomedical electronic engineering.

A8. How to make critical evaluations of current research and advanced scholarship in biomedical electronics, to evaluate methodologies and to develop critiques of them.

A9. (For the "with Industrial Studies" variant) How to apply your academic skills and knowledge to solving problems in industry.

A10. (For the "with Industrial Studies" variant) The relevance of the learning outcomes listed above to a successful career in industry.

Teaching and Learning Methods

This programme is taught mainly through Lectures and Directed Reading. Learning is reinforced through tutorials (in the first two parts), design exercises (in the first two parts), coursework assignments, and project work (both individual and in groups). Outcome A1 is largely taught by self-paced methods (worksheets and in-class tests) in parts 1 and 2. A satisfactory knowledge and understanding of outcome A1 is required to complete the modules in parts I and II. Outcomes A2, A5-A8 are reached through lectured modules with understanding developed through coursework and laboratories. A substantial body of coursework in part 2 develops outcome

A3, and outcome A4 is developed through project supervisions in parts 3 and 4. Outcomes A9 and A10 are reached during the year in industry of the "with Industrial Studies" variant.

Assessment methods

Knowledge and understanding of each subject (outcomes A1-A3) are assessed mainly through written examinations. Additional forms of assessment include technical reports (outcomes A4-A6), seminar presentations (A7-A8), and project reports (A4-A8). Outcomes A9 and A10 are assessed by a report, which is written during the year in industry of the "with Industrial Studies" variant.

Subject Specific Intellectual and Research Skills

Having successfully completed this programme you will be able to:

B1. Integrate knowledge of mathematics, physical and life sciences, information technology, business context and wider engineering practice, to develop analytical and innovative solutions to engineering problems.

B2. Apply mathematical and computer-based models to critically analyse and evaluate the extent to which designs, products and systems meet the criteria defined for their current use and future developments, taking account of the impact of new and advancing technology to enhance current practice.

B3. Apply in an appropriate manner computer-aided tools in the design process so as to aid understanding of design trade-offs, and recognise capabilities and limitations of computer-based methods for engineering problem solving.

B4. Recognise the professional, legal, moral, ethical, cost, aesthetic, environmental, sustainability, health and safety issues involved in the exploitation of technology and science and be guided by the adoption of appropriate professional, ethical and legal practices.

B5. Assess technical and commercial risks, and take appropriate steps to manage those risks in the context of engineering design and solutions.

B6. Investigate, define, characterise and solve problems through use of literature, systematic analysis and design methods and to tackle non-routine problems in creative and innovative ways.

B7. Exercise awareness of quality systems and management in engineering; (Meng only) requirements and responsibilities of leadership; business and management practices relevant to biomedical electronic engineering enterprises.

Teaching and Learning Methods

These intellectual skills are taught mainly through Course- and Project-work, and design exercises. Relevant material is also covered in Lectures, Guest Lectures and (for part four Meng students) Seminars. Skill B1 is developed through Group Project Work in parts 2 and 4. Skill B2 is a consistent theme in the taught technical modules in part 3. Advanced CAD tools (skill B3) are used in laboratory and project work in every part of the degree. Skills B4, B5 and B7 are covered through skills laboratories in part 1 and developed further in parts 3 and 4. Skill B6 is developed through the Individual and Group Project work in parts 2-4.

Assessment methods

In-class tests and Written Examinations (skill B1), Technical Reports (skills B2, B4 and B7), Design Exercises (skill B3), Logbook Checks (skill B4), Design Project Reports and Presentations (skills B4-B7).

Transferable and Generic Skills

Having successfully completed this programme you will be able to:

C1. Use IT facilities including word processing, spreadsheets, browsers and search engines to find technical information,

C2. Effectively present to audiences (orally, electronically or in writing) rational and reasoned arguments that address a given engineering problem or opportunity, including assessment of the impact of new technologies,

C3. Work on a significant technical project both independently and as a member of a design team, managing both the overall task and your contribution to that task, particularly in the Meng programme,

C4. Understand the need for continuing professional development in recognition of lifelong learning,

C5. Competently manage projects, people, resources and time.

C6. (For the "with Industrial Studies" variant.) Apply the key skills listed above to industrial projects.

Teaching and Learning Methods

General proficiency with IT (skill C1) pervades the degree, and is not specifically taught. Presentations and report-writing (skill C2) are covered in part 1 lectures and practiced throughout the programme. Independent, and group working, and organisational skills (skills C3 and C5) are taught for, and developed by, the Individual and Group Projects. Professional development (skill C4) is covered in lectures. Outcome C6 is reached during the year in industry of the "with Industrial Studies" variant.

Assessment methods

Design Exercises and Projects (both Individual and Group), Technical Reports, Project and Seminar Presentations.

Subject Specific Practical Skills

Having successfully completed this programme you will be able to:

D1. Specify, design, and create electronic circuits, systems and computer software, taking account of commercial and industrial constraints.

D2. Use CAD, simulation, design, and verification tools to aid in the design of systems, and to report and comment on results.

D3. Use test and measurement instrumentation appropriate to the biomedical discipline including awareness of measurements accuracy and coverage.

D4. Recognise any risks or safety aspects that may be involved in the operation of systems within a given context.

D5. Search for information related to a design solution and present it for discussion.

D6. Plan and safely execute practical and laboratory-based biomedical experiments.

Teaching and Learning Methods

Skill D1 is taught and developed through Design Modules and Projects in parts 2-4. Advanced CAD tools (skill D2) are used in laboratory and project work in every part of the degree. Skills D3-D4 are covered in Lectures and Laboratory Sessions in parts 1 and 2. Skill D5 is taught through Lectures and Project Supervisions. Skill D6 is taught in laboratory sessions and project work in every part of the degree.

Assessment methods

Design Exercises (skills D1,D2, D5 and D6), Supervised Laboratories (skills D3,D4 and D6), Design Projects (skills D4-D6), Technical Reports and Seminar Presentations (skill D5).

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
	Part 1 labs	●	●			●	
COMP3200	Individual Project			●	●	●	●
COMP3219	Engineering Management and Law	●	●				
ELEC3200	Industrial Studies		●		●	●	●
COMP6200	Group Design Project			●	●	●	●

Programme Structure

Typical course content

You will study 60 European Credit Transfer and Accumulation System (ECTS) credit points, in parts 1, 2 and 3. MEng students study 60 ECTS credits in part 4. These credits are at level 4 in the Framework for Higher Education Qualifications (FHEQ) in part 1, mainly at level 5 in part 2, then at level 6 in part 3, and level 7 in part 4. If you complete a year in industry, as part of the "with Industrial Studies" variant, you will complete a study worth 30 ECTS credit points at level 6. This will qualify you for the award of the enhanced degree.

The first two years of the programme is based on core and compulsory modules covering the fundamentals common to all electronics degrees, complemented with the fundamentals of the life sciences. This includes design exercises and laboratories that are specific to life sciences and biomedical engineering. In the third and fourth years, compulsory modules and projects further develop your skills in biomedical electronics with optional modules for further specialisation.

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.

Programme details

The programme includes four parts, as well as a year in industry for students in the “with Industrial Studies” variant. Each part comprises two semesters, each containing twelve teaching weeks, followed by two or three examination weeks.

Part I: 60 ECTS credits, all at FHEQ level 4

All modules are core. A core module is a module which must be taken and passed by all students. Core modules may not be passed by compensation, but they are eligible for referral and repeat. Referral is the re-taking of all or part of the assessment or an alternative assessment for a failed module in order to achieve the pass mark. Repeat is the re-taking of assessments during the academic year following the first attempt, or following an unsuccessful referral.

Module Code	Title	Sem	ECTS	
ELEC1206	Electrical materials and fields	both	7.5	Core
MATH1055	Mathematics for Electronic and Electrical Engineering I	both	7.5	Core
ELEC1200	Electronic Circuits	1	7.5	Core
ELEC1201	Programming	1	7.5	Core
ELEC1202	Digital Systems & Microprocessors	1	7.5	Core
ELEC1210	Molecular basis of life	2	7.5	Core
ELEC1205	Solid State Devices	2	7.5	Core
ELEC1209	Electronic Systems for Biomedicine	2	7.5	Core

Part II: 60 ECTS credit points, all at FHEQ level 5 except for BIOL1011 (Level 4)

All modules are compulsory. A compulsory module is a module which must be taken by all students. Compulsory modules may be passed by compensation or by referral. Pass by compensation is the award of credit for a failed module on the basis that performance elsewhere in the part is sufficient to ensure the learning outcomes of the programme tested in that part have been met, or will be met following successful referral.

Module Code	Title	Sem	ECTS	
ELEC2225	Health technologies design project	both	7.5	Compulsory
BIOL1011	Systems Physiology	1	7.5	Compulsory
ELEC2226	Biomedical Control	1	7.5	Compulsory
ELEC2221	Digital Systems and Signal Processing	1	7.5	Compulsory

MATH2047	Mathematics for Electrical & Electronic Engineering II	1	7.5	Compulsory
ELEC2227	Semiconductor Devices and Sensors	2	7.5	Compulsory
ELEC2204	Computer Engineering	2	7.5	Compulsory
ELEC2216	Advanced Electronic Systems	2	7.5	Compulsory

Year in Industry: 30 ECTS credit points, all at FHEQ level 6

Students on the "with Industrial Studies" variant will complete a placement year at a recognised partner company. This year may be taken between years 2 and 3, or between years 3 and 4. During this year, students must complete one or more projects, as agreed between the partner company and the School. The placement will be assessed by a report and other activities, as described in the module specification (ELEC3200). 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.

Part III: 60 ECTS credit points, all at FHEQ level 6 (except for BIOL2014 and some language and broadening modules)

All students must take the COMP3200 Individual Project (22.5 ECTS credits), which is core and is weighted 7.5 ECTS credits in Semester I and 15 in semester II. In addition, students must take certain specified modules, as given in the tables below.

Finally, students should select optional modules to make up the total to 60 ECTS credits. Besides COMP3200, COMP3212 and COMP3219, a maximum of 2 other "externally taught" modules (BIOLXXXX, USOMxxxx, COMPxxxx, SESGxxxx, SESMxxxx, ENTRxxxx, FRENxxxx, GERMxxxx, LANGxxxx, LAWSxxxx MANGxxxx and MATHxxxx) may be chosen. Students must select a 30:30 credit balance between semesters.

This programme has core, compulsory and optional modules as follows:

Module Code	Title	ECTS	Sem	BEng	MEng
COMP3200	Individual Project	22.5	both	Core	Core
BIOL2014	Neuroscience	7.5	1	Compulsory	Compulsory
COMP3219	Engineering Management and Law	7.5	1	Optional	Compulsory
ELEC3226	Biosensors and Diagnostics	7.5	2	Compulsory	Compulsory
COMP3206	Machine Learning	7.5	1	Optional	Optional
COMP3212	Computational Biology	7.5	2	Optional	Optional
COMP3215	Real-Time Computing and Embedded Systems	7.5	1	Optional	Optional
ELEC3201	Robotic Systems	7.5	1	Optional	Optional
ELEC3205	Control System Design	7.5	1	Optional	Optional
ELEC3206	Digital Control System Design	7.5	2	Optional	Optional
ELEC3208	Analogue and Mixed Signal Electronics	7.5	2	Optional	Optional
ELEC3218	Signal and Image Processing	7.5	1	Optional	Optional
ELEC3221	Digital IC and Systems Design	7.5	2	Optional	Optional
MATH3081	Operational Research	7.5	1	Optional	Optional
MATH3083	Advanced Partial Differential Equations	7.5	1	Optional	Optional
MATH3082	Optimization	7.5	2	Optional	Optional
MATH3084	Integral Transform Methods	7.5	2	Optional	Optional
BIOLxxxx	Modules from the Centre of Biological Sciences may be taken subject to approval by the module leaders and fulfilment of the prerequisites.	7.5	either	Optional	Optional
LANGxxxx	A language module scheduled in the Broadening Horizons slot. The appropriate stage will be selected after diagnostic testing by the language school	7.5	either	Optional	Optional
UOSMxxxx	Any other module from the University's Broadening Horizons programme. Particularly relevant modules include: UOSM2004 Global Health UOSM2013 Pathological Mechanisms of Disease UOSM 2027 Health Policy and Economics UOSM 2031 Engineering Replacement Body Parts	7.5	either	Optional	Optional

Part IV: 60 ECTS credit points, all at FHEQ level 7

All students must take the ELEC6200 Group Design Project (22.5 ECTS credits), which is core and is weighted 15 ECTS credits in Semester I and 7.5 in semester II. In addition, students must take certain specified modules, as given in the tables below.

Students should note that there are a number of prerequisites for the optional modules which are listed in the module specifications; decisions they made for Pt III may affect their choice. It should also be noted that it may not be possible to run some modules if the number of students registered is very small.

Finally, students should select optional modules to make up the total to 60 ECTS credits. Besides COMP6228, a maximum of 2 other "externally taught" modules (BIOLxxxx and MATHxxxx) may be chosen. Students must select a 30:30 ECTS credit balance between semesters.

This programme has core, compulsory and optional modules as follows:

Module Code	Title	ECTS	Sem.	MEng
ELEC6200	Group Design Project	22.5	both	Core
ELEC6204	Microfluidics and Lab-on-a-Chip	7.5	1	Compulsory
ELEC6251	Medical Sensors and Instrumentation	7.5	2	Compulsory
COMP6228	Individual Research Project	7.5	2	Optional
ELEC6201	Microfabrication	7.5	1	Optional
ELEC6203	Microsensor technologies	7.5	1	Optional
ELEC6206	Nanofabrication and Microscopy	7.5	2	Optional
ELEC6208	Bio/Micro/Nano Systems	7.5	2	Optional
ELEC6209	Practical Applications of MEMS	7.5	2	Optional
ELEC6212	Biologically-Inspired Robotics	7.5	2	Optional
ELEC6213	Image Processing	7.5	2	Optional
ELEC6228	Applied Control Systems	7.5	2	Optional
ELEC6230	VLSI Systems Design	7.5	1	Optional
ELEC6231	VLSI Design Project	7.5	2	Optional
ELEC6233	Digital Systems Synthesis	7.5	2	Optional
ELEC6235	SoC Design Project	7.5	2	Optional
ELEC6237	Secure Hardware Design	7.5	1	Optional
BIOLxxxx	Modules from the Centre of Biological Sciences may be taken subject to approval by the module leaders and fulfilment of the pre-requisites.	7.5	either	Optional
MATH6141	Numerical Methods	7.5	1	Optional
MATH6149	Modelling with Differential Equations	7.5	2	Optional

Alternatively, semester II of Pt IV may be taken at a partner institution overseas, which has been approved by the Erasmus coordinator. In this case, ELEC6247 Group Design Project (Overseas Placement) should be taken instead of ELEC6200 Group Design Project during semester I. In this case, ELEC6247 is core and carries 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. The marks awarded by the overseas institution will be converted to equivalent UK marks by the Erasmus coordinator.

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 and Academic Regulations - Faculty of Physical Sciences and Engineering as set out in the University Calendar.

Intermediate exit points

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

Qualification	Minimum overall credit in ECTS credits	Minimum ECTS Credits required at level of award
Honours degree - BEng (hons)	at least 180	45
Ordinary degree - BEng	at least 150	30
Diploma of Higher Education - DipHE	at least 120	45
Certificate of HE - CertHE	at least 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. Students can also access SVE (Southampton Virtual Environment), a virtual Windows University of Southampton desktop that can be accessed from personal devices such as PCs, Macs, tablets and smartphones from any location.
- 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.
- Central IT support is provided through a comprehensive website, telephone and online ticketed support and a dedicated helpdesk in the Hartley Library foyer
- 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:

- Induction – You will have an induction programme at the start of your programme. Besides covering the usual routine matters, it is especially important for you to be properly registered and to have your computer account set up, since the modules you study are supported by on-line systems. Assessment is also managed on-line, so any delay in registration could be detrimental to your studies. In addition, a diagnostic exercise helps us to assess your strengths and offer advice on how best to focus your efforts in the early stages of your studies.
- Personal tutoring – At the start of your studies, you are allocated a Personal Tutor who you will see regularly. Also there is Senior Tutoring team if your personal tutor is not available.
- Computer workstations, with a range of software, manuals and books, with early to late access through a card-lock mechanism.
- Traditional and wireless local area networks.
- 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.

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, 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
- Accreditation by the Institution of Engineering and Technology
- The REF (our research activity contributes directly to the quality of your learning experience)
- Institutional Review by the Quality Assurance Agency

Your views matter to us. We have a high reputation for quality of delivery, and we aim to keep it that way. The most important form of feedback comes through direct, personal contact, and we encourage you to talk to us if anything becomes a concern at any stage. If you find it difficult to talk directly to the member of staff with whom you have immediate contact, you are encouraged to talk to someone else in the teaching team, the Senior Tutor, or the School's Student Services Office, but we do encourage you to talk about it immediately. In addition, there is always a formal evaluation of each module by questionnaire at the end of the semester. These questionnaires are analysed and peer reviewed, and must be responded to formally, both to you and to the University. We also hold Student-Staff Liaison Committee meetings at least twice a year. Anyone is welcome to these meetings, but depending on the circumstances, it may be more effective to elect programme representatives who will make

your views known. This then enables you to have an element of anonymity should you be embarrassed in any way about the idea of speaking up.

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) Note that entry into the MEng with IS variant is via transfer from the BEng or MEng variants.	Maths and Physics. Further Mathematics, Biology, or Chemistry may be considered instead of Physics.	General Studies or Critical Thinking	N/A	Considered on an individual basis
GCSE (Required to support higher qualifications, e.g. A Levels)	C	English and Maths			
BTEC	Considered on an individual basis				Considered on an individual basis
International Baccalaureate	IB: BEng: 36 points, 18 at higher level MEng: 38 points, 18 at higher level	6 in Maths, 6 in Physics at HL			Considered on an individual basis

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.

Recognition of Prior Learning (RPL)
The University has a Recognition of Prior Learning Policy, which can be seen at http://www.southampton.ac.uk/quality/assessment/prior_learning.page

English Language Proficiency

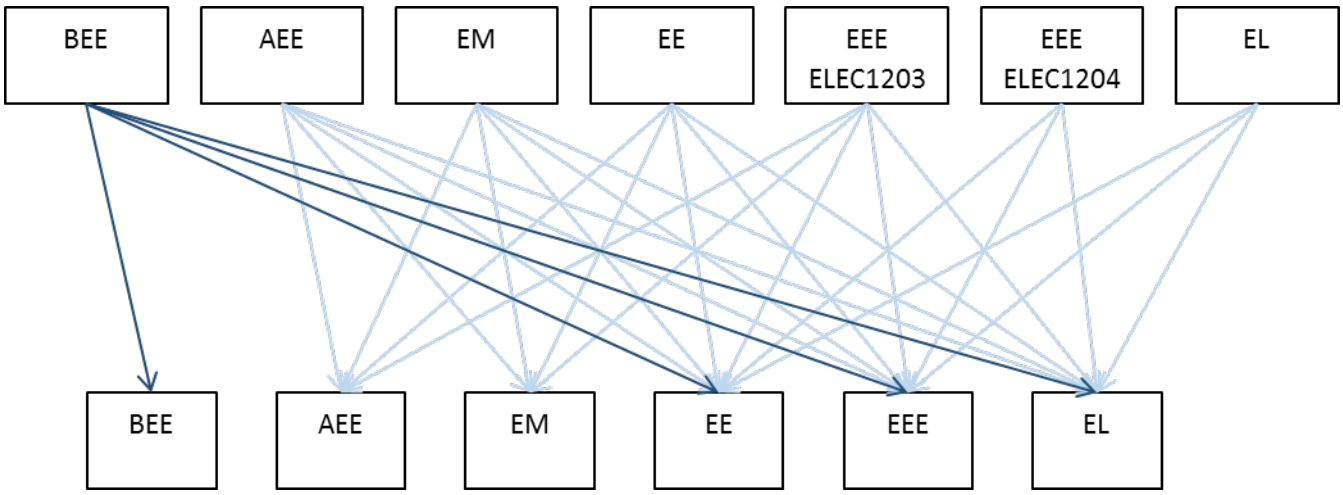
Overall	Reading	Writing	Speaking	Listening
6.5	5.5	5.5	5.5	5.5

Transfer policy

Biomedical Electronic Engineering (BEE) has a significantly different course structure than the other electronics programmes (Electronic Engineering (EL), Electrical & Electronic Engineering (EEE), Electrical Engineering (EE), Mechatronic Engineering (EM) and Aerospace Electronic Engineering (AEE). This imposes complications upon transfers between these programmes.

Students who are thinking about transferring between BEE, AEE, EL, EEE, EE and EM are encouraged to discuss this with their academic tutors at the earliest possible opportunity. Transfers between these programmes can be arranged at any time, at the discretion of the programme leader of the destination programme. Additionally, the programme leaders will guarantee transfers from BEng BEE to BEng EL, EEE or EE at the end of part 1, for students that have passed that part with an overall average (before referral marks are capped) of at least 58% (without rounding up). Likewise, the programme leaders will guarantee transfers from MEng BEE to MEng EL, EEE, or EE at the end of part 1, for students that have met the same criterion. These students are advised to study the communications topics of ELEC1207, as well as the topics of either ELEC1203 (EE or EEE) or ELEC1204 (EL or EEE) as appropriate, during the summer before beginning part 2.

Similarly, students who are thinking about transferring from BEng to MEng programmes are encouraged to discuss this with their academic tutors at the earliest possible opportunity. Transfers from BEng to MEng programmes can be arranged at any time, at the discretion of the programme leader of the destination programme. Additionally, the programme leaders will guarantee transfers from BEng to MEng programmes at the end of part 2, for students that have passed that part with an overall average (before referral marks are capped) of at least 58% (without rounding up).



Career Opportunities

Major employers worldwide are keen to employ our graduates – in system development, information technology and communications in the IT sector, in electronics and biomedical electronics in the engineering sector, and in the finance, service, communications and entertainment industries. We have strong relationships with employers, run our own Careers Hub website (www.ecs.soton.ac.uk/careers) and hold our own annual careers fair.

External Examiners(s) for the programme

Parts 1 and 2
Name: To be appointed
Institution:

Parts 3 and 4
Name: To be appointed
Institution:

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 (http://www.fpse.soton.ac.uk/student_handbook).

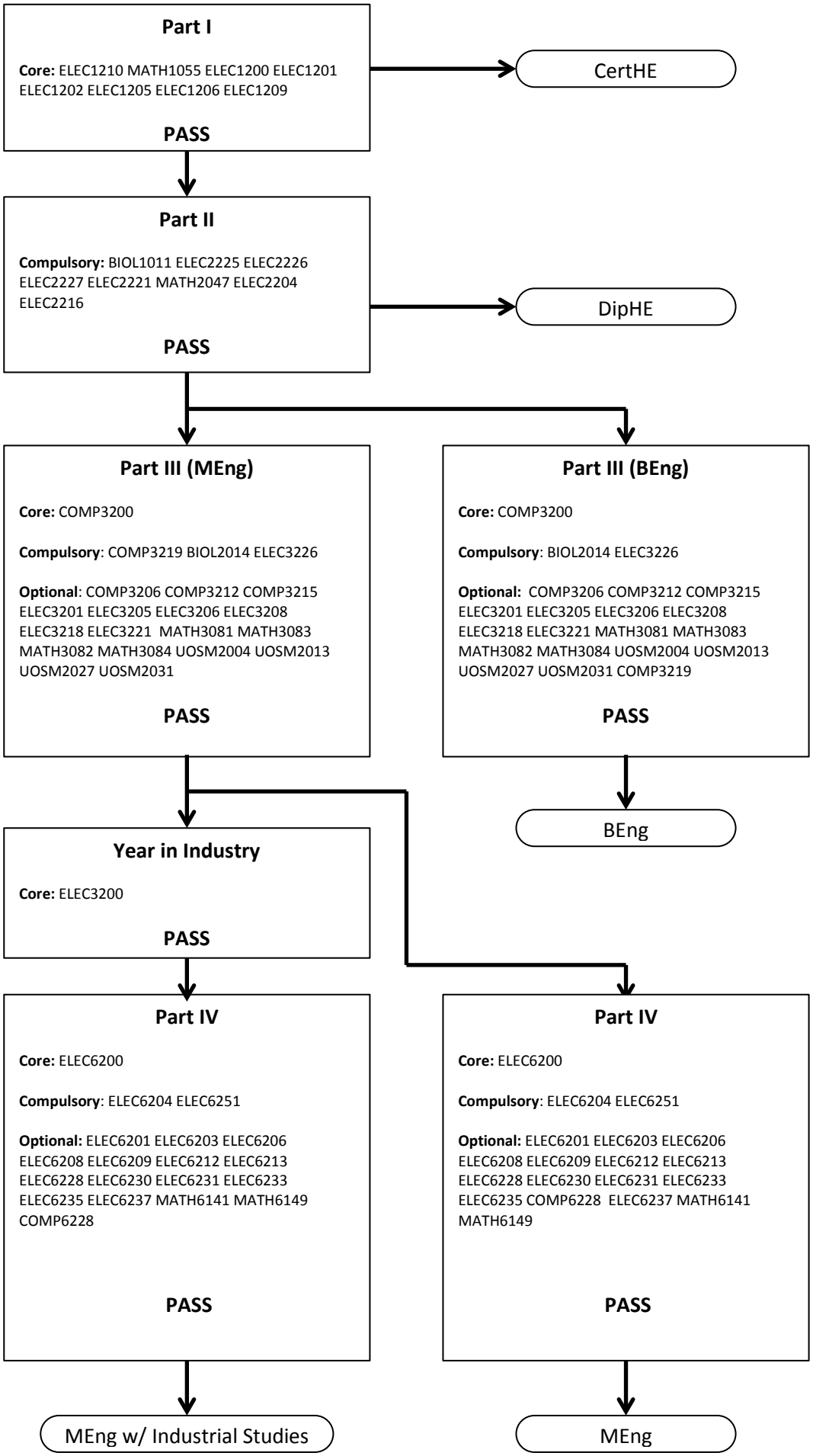
Appendix 1:

Module Code	Module Title	Knowledge and Understanding										Subject Specific Intellectual Skills							Transferable/Key Skills						Subject Specific Practical Skills					
		A1	A2	A3	A4	A5	A6	A7	A8	A9	A10	B1	B2	B3	B4	B5	B6	B7	C1	C2	C3	C4	C5	C6	D1	D2	D3	D4	D5	D6
ELEC1210	Molecular Basis of Life	O	O					O	O									O	O								O			O
MATH1055	Mathematics for Electrical & Electronic Engineering I	O																	O											
ELEC1200	Electronic Circuits		O		O								O	O		O	O		O		O		O		O	O	O	O		
ELEC1201	Programming			O	O											O	O		O		O		O		O		O	O		
ELEC1202	Digital Systems & Microprocessors		O	O	O								O	O		O	O		O		O		O		O	O	O	O		
ELEC1205	Solid State Electronics	O																	O								O	O		
ELEC1206	Electrical Materials and Fields	O																	O									O	O	
ELEC1209	Electronic Systems for Biomedicine		O										O						O								O	O		O
BIOL1011	Systems Physiology	O						O					O						O								O	O		O
ELEC2225	Health Technologies Design Project	O	O	O	O		O	O	O			O	O	O	O	O	O	O	O	O	O		O		O	O	O	O	O	O
ELEC2226	Biomedical Control		O										O	O					O							O	O	O		O
ELEC2227	Semiconductor Devices and Sensors	O																	O								O	O		
ELEC2221	Digital Systems and Signal Processing		O										O						O								O	O		
MATH2047	Mathematics for Electrical & Electronic Engineering II	O																	O											
ELEC2204	Computer Engineering		O										O	O					O							O	O	O		
ELEC2216	Advanced Electronic Systems		O										O	O					O							O	O	O		
ELEC3200	Year in Industry									O	O								O					O						
COMP3219	Engineering Management and Law						O								O			O	O			O								
BIOL2014	Neuroscience	O						O					O						O								O	O	O	O
COMP3200	Individual Project				O	O		O	O						O	O	O		O	O	O		O		O				O	
ELEC3226	Biosensors and Diagnostics		O			O							O						O								O	O		O
COMP3206	Machine Learning																		O											
COMP3212	Computational Biology																		O											
COMP3215	Real-time Computing and Embedded Systems												O	O					O							O	O			
ELEC3201	Robotic Systems												O	O					O							O				
ELEC3205	Control System Design												O						O											
ELEC3206	Digital Control System Design												O						O											
ELEC3208	Analogue and Mixed Signal Electronics												O	O					O							O				
ELEC3218	Signal and Image Processing												O						O											
ELEC3221	Digital IC and Systems Design												O	O					O							O				
MATH3081	Operational Research	O																	O											
MATH3083	Advanced Partial Differential Equations	O																	O											
MATH3082	Optimization	O											O	O					O							O				
MATH3084	Integral Transform Methods	O																	O											
ELEC6200	Group Design Project				O	O	O	O	O			O			O	O	O	O	O	O	O	O	O	O	O				O	O
ELEC6204	Microfluidics and Lab-on-a-Chip					O							O						O											
ELEC6251	Medical Sensors and Instrumentation	O	O			O	O	O	O						O	O		O	O								O			O
COMP6228	Individual Research Project					O		O	O						O		O		O	O									O	
ELEC6201	Microfabrication												O						O											
ELEC6203	Microsensor Technologies												O						O								O			
ELEC6206	Nanofabrication and Microscopy												O						O											
ELEC6208	Bio/Micro/Nano Systems												O						O											
ELEC6209	Practical Applications of MEMS					O							O	O					O							O	O			
ELEC6212	Biologically-Inspired Robotics												O				O		O	O	O		O						O	
ELEC6213	Image Processing												O						O											
ELEC6228	Applied Control Systems												O						O	O									O	
ELEC6230	VLSI Systems Design				O							O	O	O			O		O		O		O		O	O	O			
ELEC6231	VLSI Design Project				O							O	O	O			O		O		O		O		O	O				
ELEC6233	Digital Systems Synthesis												O	O					O							O				
ELEC6235	SoC Design Project				O							O	O	O			O		O		O		O		O	O				
ELEC6237	System on Chip Electronic Design Automation				O							O	O	O			O		O		O		O		O	O	O			
ELEC6241	System on Chip Design Techniques												O						O											
MATH6141	Numerical Methods	O																	O											
MATH6149	Modelling with Differential Equations	O																	O											

Module Code	Module Title	Coursework 1	Coursework 2	Coursework 3	Coursework 4	Exam
ELEC1210	Molecular Basis of Life	7.5% - Practical Lab Enzyme Kinetics	7.5% - Practical Lab Chromatography of amino acids	7.5% - Practical Lab Gel electrophoresis of DNA	7.5% - Practical Lab SDS-PAGE	70% - Exam, 2 hours
ELEC1209	Electronic Systems for Biomedicine	10% - Technical Lab Sessions	10% - Coursework Assignment	10% Skills Labs		70% - Exam, 2 hour(s)
MATH1055	Mathematics for Electronic and Electrical Engineering I	20% - Coursework mark generated from 18 tests at end of each weekly topic.				10% - Exam, 1 hour(s) 70% - Exam, 2 hour(s)
ELEC1200	Electronic Circuits	20% - Practical Lab Sessions	15% - Lab project	30% - Problem Sheets	35% - In Class Test	
ELEC1201	Programming	20% - Practical Lab Sessions: C Programming	25% - Practical Lab Sessions: Embedded C Programming	15% - Project	40% - Two in-class tests.	
ELEC1202	Digital Systems & Microprocessors	20% - Practical Lab Sessions	10% - Design Exercise	10% - Problem Sheets		60% - Exam, 2 hour(s)
ELEC1205	Solid State Devices	20% - Practical Lab Sessions	10% - Coursework Assignment			70% - Exam, 2 hour(s)
BIOL1011	Systems Physiology	25% Laboratories				75% -Exam, 2 hour(s)
ELEC2225	Health Technologies Design Project	10% - Laboratories	5% - Project proposal	25% - Team report and group presentation	60% - Individual technical report and reflection	
ELEC2226	Biomedical Control	15% - Practical Lab Sessions	10% - Coursework assignment			75% - Exam, 2 hour(s)
ELEC2227	Semiconductor Devices and Sensors	5% - Practical Lab Sessions	10% Coursework assignment			85% - Exam, 2 hour(s)
ELEC2221	Digital Systems and Signal Processing	15% - Practical Lab Sessions	15% - Coursework			70% - Exam, 2 hour(s)
MATH2047	Mathematics for Electrical & Electronic Engineering II	20% - Coursework				80% - Exam, 2 hour(s)
ELEC2204	Computer Engineering	20% - Practical Lab Sessions	2% - In Class Test			78% - Exam, 2 hour(s)
ELEC2216	Advanced Electronic Systems	10% - Practical Lab Sessions	10% - Design Task			80% - Exam, 2 hour(s)
ELEC3200	Year in Industry	100% - Project report				
COMP3200	Individual Project	10% - Progress Report	80% - Final Report	10% - Viva		
BIOL2014	Neuroscience	20% Practical Lab Sessions	5% Library Project			75% - Exam, 2 hours
COMP3219	Engineering Management and Law	33% - Formative coursework assessing Accounting for Engineering Decision Making	33% - Summative computer mediated testing assessing Law in Engineering	33% - Formative coursework assessing Managerial Decisions, Marketing, Human Resource Management and Entrepreneurship		
ELEC3226	Biosensors and Diagnostics	50% Laboratory Report				50% -Exam, 2 hour(s)
COMP3206	Machine Learning	30% - 3 Small Coursework's	20% Large Coursework			50% Exam, 2 hour(s)
COMP3212	Computational Biology	30% - short assignments	40% - major assignment (to be	30% - Three in-class quizzes, of which		

		(maximum two weeks turn around)	done over a four-week period)	your best two will be used		
COMP3215	Real-time Computing and Embedded Systems	30% - Real-time laboratories				70% - Exam, 2 hour(s)
ELEC3201	Robotic Systems	25% - Kinematic design and analysis of robotic systems				75% - Exam, 2 hour(s)
ELEC3205	Control System Design	20% - 4 problem sheets				80% - Exam, 2 hour(s)
ELEC3206	Digital Control System Design					100% - Exam, 2 hour(s)
ELEC3208	Analogue and Mixed Signal Electronics	10% - Analogue Circuit Design				90% - Exam, 2 hour(s)
ELEC3218	Signal and Image Processing					100% - Exam, 3 hour(s)
ELEC3221	Digital IC and Systems Design	10% - L-Edit Gate Design	10% - Digital Systems Design			80% - Exam, 2.5 hour(s)
MATH3081	Operational Research	20% - Group Coursework assignment				80% - Exam, 2 hours
MATH3083	Advanced Partial Differential Equations	20% - Coursework				80% - Exam, 2 hours
MATH3082	Optimization	20% - Coursework				80% - Exam, 2 hours
MATH3084	Integral Transform Methods	20% - Coursework				80% - Exam, 2 hours
UOSM2004	Global Health	20% - Coursework Global health data analysis	30% - Coursework Critical Review	50% - Written in-class test		
UOSM2013	Pathological Mechanisms of Disease	Poster presentation of a product of the group work				Exam: one-best-answer and extended matching item questions
UOSM2027	Health Policy and Economics	40% Mid-term test	30% Group essay	30% Group Presentation		
UOSM2031	Engineering Replacement Body Parts	30% Group Presentation	30% Blog Exercise			40% Exam (Multiple Choice / One Best Answer)
ELEC6200	Group Design Project	50% - Group Report	10% - Group Presentation	10% - Individual Reflection	30% - Individual Report and Poster on Business Case Study	
ELEC6247	Group Design Project (Overseas Placement)	70% - Group Report	15% - Group Presentation	15% - Individual Reflection		
ELEC6251	Medical Sensors and Instrumentation	30% Lab Report				70% - Exam, 2 hour(s)
ELEC6204	Microfluidics and Lab-on-a-Chip	30% Lab Report				70% - Exam, 2 hour(s)
COMP6228	Individual Research Project	75% literature search, interim and final report	25% poster			
ELEC6201	Microfabrication	30% Lab Report				70% - Exam, 2 hour(s)
ELEC6203	Microsensor technologies	30% - laboratory report				70% - Exam, 2 hour(s)
ELEC6206	Nanofabrication and Microscopy	30% - Coursework Lithography simulation lab report				70% - Exam, 2 hour(s)

ELEC6208	Bio/Micro/Nano Systems	40% - Accelerometer lab report	30% - 30% - Resonator lab report	30% - Glucose sensor lab report	25% - MEMS Lab report	
ELEC6209	Practical Applications of MEMS	10% - Two lab sessions	30% - Assignment 1: research, design, report	30% - Assignment 2: simulate, construct, report	30% - Assignment 3: characterisation/test report and analysis	
ELEC6212	Biologically-Inspired Robotics	5% - Initial plans	40% - Technical execution	30% - Documentation	20% - Wiki or video	5% - Individual reflection
ELEC6213	Image Processing					100% - Exam, 2 hours
ELEC6228	Applied Control Systems	30% - Coursework sheet associated with each of the 3 control topics	50% - Group report of the experimental component	10% - Seminar presentation session given by each group	10% - Written critique of another group's work	
ELEC6230	VLSI Systems Design	10% - Mini design assignment with electronic submission of designs (modulated by lab performance)	20% - Mini design assignment with electronic submission of designs (modulated by lab performance)	35% - Mini design assignment with electronic submission of designs (modulated by lab performance)	35% - Mini design assignment with electronic submission of designs (modulated by lab performance)	
ELEC6231	VLSI Design Project	20% - Milestone Submissions	75% - Design Submission	5% - Individual Reflection		
ELEC6233	Digital Systems Synthesis	10% - Laboratory Low Power	40% - Coursework Complex system synthesis			50% - Exam, 2 hour(s)
ELEC6235	SoC Design Project	100% - Main Report				
ELEC6237	Secure Hardware Design	50% - Coursework Analogue IC Design	50% - Coursework Digital IC Design			
MATH6141	Numerical Methods	40% - 3 coursework assignments				60% - Exam, 2.25 hours
MATH6149	Modelling with Differential Equations	75% - 3 group projects	25% - coursework			


Part I
Core: ELEC1210 MATH1055 ELEC1200 ELEC1201 ELEC1202 ELEC1205 ELEC1206 ELEC1209
PASS
CertHE
Part II
Compulsory: BIOL1011 ELEC2225 ELEC2226 ELEC2227 ELEC2221 MATH2047 ELEC2204 ELEC2216
PASS
DipHE
Part III (MEng)
Core: COMP3200
Compulsory: COMP3219 BIOL2014 ELEC3226
Optional: COMP3206 COMP3212 COMP3215 ELEC3201 ELEC3205 ELEC3206 ELEC3208 ELEC3218 ELEC3221 MATH3081 MATH3083 MATH3082 MATH3084 UOSM2004 UOSM2013 UOSM2027 UOSM2031
PASS
Part III (BEng)
Core: COMP3200
Compulsory: BIOL2014 ELEC3226
Optional: COMP3206 COMP3212 COMP3215 ELEC3201 ELEC3205 ELEC3206 ELEC3208 ELEC3218 ELEC3221 MATH3081 MATH3083 MATH3082 MATH3084 UOSM2004 UOSM2013 UOSM2027 UOSM2031 COMP3219
PASS
BEng
Year in Industry
Core: ELEC3200
PASS
Part IV
Core: ELEC6200
Compulsory: ELEC6204 ELEC6251
Optional: ELEC6201 ELEC6203 ELEC6206 ELEC6208 ELEC6209 ELEC6212 ELEC6213 ELEC6228 ELEC6230 ELEC6231 ELEC6233 ELEC6235 ELEC6237 MATH6141 MATH6149 COMP6228
PASS
MEng w/ Industrial Studies
Part IV
Core: ELEC6200
Compulsory: ELEC6204 ELEC6251
Optional: ELEC6201 ELEC6203 ELEC6206 ELEC6208 ELEC6209 ELEC6212 ELEC6213 ELEC6228 ELEC6230 ELEC6231 ELEC6233 ELEC6235 COMP6228 ELEC6237 MATH6141 MATH6149
PASS
MEng

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) 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.

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.
T**extbooks**		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:	

Main Item	Sub-section	PROGRAMME SPECIFIC COSTS
	Medical Equipment and Materials: Fobwatch; stethoscopes;	
	Music Equipment and Materials	
	Photography:	
	Recording Equipment:	
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		

Revision History

1. Daniel Spencer and Hywel Morgan, 17th March 2016, Initial version
2. Rob Maunder, 19th March 2016, Some minor corrections
3. Daniel Spencer and Hywel Morgan, 23th March 2016, Minor corrections
4. Hywel Morgan April 7th 2016 Minor correction following Education Board
5. Laura Morley 13 May 2016 Updated BIOL and GDP Overseas module codes
6. Daniel Spencer 13th June 2016. Added COMP3212 to the options list of 'internal' modules
7. Daniel Spencer 8th August 2016. Added codes for new modules.
8. Ali Penny (CQA) 7th December 2016. Updated Programme Structure to add optional module viability
9. Daniel Spencer 7th March 2017. Minor changes to module names, codes. Updated ELEC2216 assessment.
10. CQA Team, 8th March 2017, FPC approval of 2017/18 draft.
11. CQA Team, 30th March 2017, FPC approval (08/03) of 2017/18
12. CQA Team, 17th May 2017, changed ELEC6237 System on Chip to 'Secure Hardware Design'
13. CQA Team, 17th May 2017, removal of ELEC6241
14. CQA Team, 7th December 2017, FPC approved optional module size caveat