UNIVERSITY OF Southampton

Programme Specification

MEng (Hons), BEng (Hons) Acoustical Engineering MEng (Hons), BEng (Hons) Acoustical Engineering with Industrial Placement Year – 2020/21

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	5 years (MEng with Industrial Placement Year), 4 years (MEng), 4 years (BEng with Industrial Placement Year), 3 years (BEng),
Accreditation details	Institution of Mechanical Engineers BEng (Honours) fully meets the academic requirement for registration as an Incorporated Engineer and partly meets the academic requirement for registration as a Chartered Engineer. MEng fully meets the academic requirement for registration as a Chartered Engineer.
Final award	Bachelor of Engineering (Honours) Master of Engineering
Name of award	Acoustical Engineering All of the degrees above may also be taken with an Industrial Placement Year (IPY) and will then have 'with Industrial Placement Year' appended to the degree title
Interim Exit awards	Certificate of Higher Education Diploma of Higher Education Bachelor of Science (Ordinary)
FHEQ level of final award	Level 7 (MEng), Level 6 (BEng)
UCAS code	HH72 BEng Acoustical Engineering H34P BEng Acoustical Engineering with Industrial Placement Year (2018/19) H722 MEng Acoustical Engineering FF38 MEng Acoustical Engineering with Industrial Placement Year
QAA Subject Benchmark or other external reference	QAA Subject Benchmark – Engineering 2015; Accreditation of Higher Education Programmes, Edition 3, Engineering Accreditation Board.
Director of Programmes	Dr Matthew Wright
Programme Lead	Dr Keith Holland
Date specification was written	February 2019 (Dr M CM Wright)
Date Programme was validated	April 2019
Date specification last updated	June 2019

Programme Overview

Brief outline of the programme
The degree encompasses a solid mechanical engineering foundation to build upon a scientific and engineering approach to the subject of sound and vibration, the educational aims of which can be found below.

You will have the opportunity to study a wide range of specialist areas, taught by world experts in their field. You will be trained in the use of specialist modelling software and state-of-the-art equipment. You will undertake a wide variety of design tasks, projects and group activities to prepare you for a professional engineering career.

Special Features of the programme
You will be encouraged to use the research facilities, within the research groups, for yout individual projects and gain some experience in the use of the commercial acoustic chambers as part of your design activities. You will be trained in the use of Sound Level Meters by a practicing consultant from our own consultancy unit.

Learning and teaching
Intellectual skills are developed through the teaching and learning activities. Analysis and problem solving skills are further developed through regular problem sheets issued by module lecturers and through small group teaching. Experimental, research and design skills are further developed through coursework exercises, laboratory work, and design and research projects. Individual feedback is provided on all work submitted. Appreciation of the practical application of the skills for learning is provided by interaction with industry, through visiting lecturers and industrial visits.

Assessment
Testing of the knowledge base is through a combination of unseen written examinations and assessed coursework in the form of problem solving 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.

Educational Aims of the Programme

The Acoustical Engineering undergraduate programme is unique in the UK in its combined coverage of acoustics and vibration within the framework of an accredited mechanical engineering degree. The aims of the programme are: (Blue = both BEng & MEng; green = MEng only, orange = Industrial Placement Year for BEng and MEng)

- To provide you with a firm foundation in a wide range of engineering disciplines that underpin acoustics through a core of compulsory engineering modules in years 1 and 2.
- To deepen your understanding of acoustics, vibration and other engineering disciplines through a range of specialist modules in year 3.
- To broaden and further deepen your understanding of acoustics, vibration and other engineering disciplines through a range of specialist modules in year 4.
- To develop in you the necessary technical skills to fulfil the role of a professional acoustics and vibration engineer in a design or research environment.
- To develop in you the necessary technical skills to fulfil the role of a professional acoustics and vibration engineer in a design, consulting or research environment.
- To provide a learning environment in which you are able to develop generic skills needed for management and leadership roles in engineering industry but which are also transferable to other occupations and pursuits unrelated to employment.

- To provide a learning environment in which you are able to develop a wide range of generic skills that are vital to management and leadership roles in engineering industry but also transferable to other occupations and pursuits unrelated to employment.
- To offer you a range of projects and realistic tasks that stimulate individual innovation, necessitate problem formulation and solving, promote self-assessment and enhance communication.
- To offer you a range of projects and realistic tasks that stimulate individual innovation, necessitate problem formulation and solving, promote self-assessment and enhance communication and build strong teamworking skills
- To expose you to an intellectually challenging and world leading research environment to stimulate an attitude of enquiry and independent self-learning, and foster an ethos of life-long learning and professional development.
- To expose you to an intellectually challenging and world leading research environment to stimulate an attitude of enquiry and independent self-learning, and foster an ethos of life-long learning and professional development.
- To promote awareness of engineering in practice through interaction with industry, e.g. work placements, external speakers, industrial visits and industrial design projects.
- To provide recognition of your skill set on completion of your studies through the award of a highly esteemed degree that partially meets the requirements of the Engineering Council for registration as a chartered engineer.
- To provide recognition of your skill set on completion of your studies through the award of a highly esteemed degree that meets the requirements of the Engineering Council for registration as a chartered engineer.
- Offer you an opportunity to apply the knowledge you have developed during your studies in Parts I and II and gain experience of working within an engineering based organisation

Programme Learning Outcomes

The programme provides opportunities for you to develop and demonstrate knowledge and understanding, qualities, skills and other attributes in the areas shown below. The programme learning outcomes have been developed with reference to the Subject Benchmark Statement for engineering (https://www.qaa.ac.uk/docs/qaa/subject-benchmark-statements/sbs-engineering-15.pdf) which is aligned with the Engineering Council publication Accreditation of Higher Education Programmes (AHEP): UK Standard for Professional Engineering Competence (third edition) (https://www.engc.org.uk/engcdocuments/internet/Website/Accreditation%20of%20Higher%20Education%20Programmes%20third%20edition%20(1).pdf)

The combined BEng and MEng column shows the learning outcomes with a mixture of Full CEng (indicated with (m)) and Partial CEng (indicated with (b)) learning outcomes which are met at FHEQ Level 6. The MEng only column indicates all of the remaining Full CEng AHEP3 learning outcomes being met at FHEQ Level 7.

Some of the BEng programme learning outcomes exceed the minimum requirement of AHEP3 and these are indicated with *italics*. Learning outcomes related specifically to the industrial placement year are indicated in orange.

Knowledge and Understanding

	Science and mathematics Acoustical engineering is underpinned by science and mathematics, and other associated disciplines, as defined by the relevant professional engineering institution(s). On graduation you will have achieved:		
	BEng and MEng		MEng only
SM1(b)	A comprehensive knowledge and understanding of the scientific principles and methodology necessary to underpin their education in Acoustical Engineering, to enable appreciation of the scientific and engineering context,	SM1(m)	A comprehensive knowledge and understanding of scientific principles and methodology necessary to underpin your education in Acoustical Engineering and an understanding and know-how of the scientific principles of related disciplines,

	and to support your understanding of relevant historical, current and future developments and technologies		to enable appreciation of the scientific and engineering context, and to support your understanding of relevant historical, current and future developments and technologies.
SM2(m)	Knowledge and understanding of mathematical and statistical methods necessary to underpin your education in Acoustical Engineering and to enable you to apply a range of mathematical and statistical methods, tools and notations proficiently and critically in the analysis and solution of engineering problems		
		SM4(m)	Awareness of developing technologies related to Acoustical Engineering
		SM5(m)	A comprehensive knowledge and understanding of mathematical and computational models relevant to Acoustics and Vibration, and an appreciation of their limitations
		SM6(m)	Understanding of concepts from a range of areas, including some outside engineering, and the ability to evaluate them critically and to apply them effectively in Acoustical Engineering projects

	Engineering analysis Engineering analysis involves the application of engineering concepts and tools to the solution of Acoustical Engineering problems. On graduation you will have achieved:		
	BEng and MEng		MEng only
EA1(b)	Understanding of engineering principles and the ability to apply them to analyse key engineering processes.	EA1(m)	Understanding of engineering principles and the ability to apply them to undertake critical analysis of key engineering processes
EA4(m)	Understanding of, and the ability to apply, an integrated or systems approach to solving complex engineering problems		

	Design Design at this level is the creation and development of an economically viable product, process or system to meet a defined need. It involves significant technical and intellectual challenges and can be used to integrate all engineering understanding, knowledge and skills to the solution of real and complex Acoustical Engineering problems. On graduation you will have the knowledge, understanding and skills to:		
	BEng and MEng		MEng only
D1(m)	Understand and evaluate business, customer and user needs in Acoustical design including considerations such as the wider engineering context, public perception and aesthetics		

	Economic, legal, social, ethical and environmental context Engineering activity can have impacts on the environment, on commerce, on society and on individuals. On graduation you will have the skills to manage your activities and to be aware of the various legal and ethical constraints under which you are expected to operate, including:		
	BEng and MEng		MEng only
EL1(b)	Understanding of the need for a high level of professional and ethical conduct in engineering, a knowledge of professional codes of conduct	EL1(m)	Understanding of the need for a high level of professional and ethical conduct in engineering, a knowledge of professional codes of conduct and how ethical dilemmas can arise
EL2(b)	Knowledge and understanding of the commercial, economic and social context of engineering processes	EL2(m)	

EL3(b)	Knowledge and understanding of management techniques, including project management, that may be used to achieve engineering objectives	EL3(m)	Knowledge and understanding of management techniques, including project and change management, that may be used to achieve engineering objectives, their limitations, and how they may be applied appropriately
EL4(m)	Understanding of the requirement for engineering activities to promote sustainable development and ability to apply quantitative techniques where appropriate		
EL5(b)	Awareness of relevant legal requirements governing engineering activities, including personnel, health & safety, contracts, intellectual property rights, product safety and liability issues.	EL5(m)	Awareness of relevant legal requirements governing engineering activities, including personnel, health & safety, contracts, intellectual property rights, product safety and liability issues, and an awareness that these may differ internationally
EL6(b)	Knowledge and understanding of risk issues, including health & safety, environmental and commercial risk, and of risk assessment and risk management techniques	EL6(m)	Knowledge and understanding of risk issues, including health and safety, environmental and commercial risk, risk assessment and risk management techniques and an ability to evaluate commercial risk
		EL7(m)	Understanding of the key drivers for business success, including innovation, calculated commercial risks and customer satisfaction

	Engineering practice This is the practical application of engineering skills, combining theory and experience, and use of other relevant knowledge and skills. On graduation you will have achieved:		
	BEng and MEng		MEng only
P1(m)	Understanding of contexts in which engineering knowledge can be applied (e.g operations and management, application and development of technology, etc.)		
P2(b)	Knowledge of characteristics of particular materials relevant to Acoustical Engineering	P2(m)	Knowledge of characteristics of particular equipment, processes or products relevant to Acoustical Engineering, with extensive knowledge and understanding of a wide range of engineering materials and components
P4(m)	Understanding of the use of technical literature and other information sources		
P5(m)	Knowledge of relevant legal and contractual issues		
P6(m)	Understanding of appropriate codes of practice and industry standards		
P7(m)	Awareness of quality issues and their application to continuous improvement		
		P9(m)	A thorough understanding of current Acoustical Engineering practice and its limitations, and some appreciation of likely new developments
P11(b)	Understanding of and ability to work within different roles within an engineering team	P11(m)	Understanding of different roles within an engineering team and the ability to exercise initiative and personal responsibility, which may be as a team member or leader

In addition, if you take the Industrial Placement Year you will be able to demonstrate an understanding of current and developing technical practice within the engineering industry and the business practice of your host organisation.

Teaching and Learning Methods

Acquisition of core knowledge and understanding is through lectures, seminars, tutorials, field and laboratory classes, computer classes, workshops, and independent study and research. You are encouraged from an early stage to supplement and consolidate your understanding and knowledge by independent study.

Assessment methods
Testing of the knowledge base is through a combination of unseen written examinations and assessed coursework in the form of problem solving exercises, laboratory reports design exercises, essays and individual and group projects.

Skills

	Science and mathematics Engineering is underpinned by science and mathematics, and other associated disciplines, as defined by the relevant professional engineering institution(s). On graduation you will have achieved:		
	BEng and MEng		MEng only
SM3(b)	Ability to apply and integrate knowledge and understanding of other engineering disciplines to support study of your own engineering discipline	SM3(m)	Ability to apply and integrate knowledge and understanding of other engineering disciplines to support study of your own engineering discipline and the ability to evaluate them critically and to apply them effectively

	Engineering analysis Engineering analysis involves the application of engineering concepts and tools to the solution of Acoustical Engineering problems. On graduation you will have achieved:		
	BEng and MEng		MEng only
EA2(m)	Ability to identify, classify and describe the performance of systems and components through the use of analytical methods and modelling techniques		
EA3(b)	Ability to apply quantitative and computational methods, in order to solve engineering problems and implement appropriate action	EA3(m)	Ability to apply quantitative and computational methods, using alternative approaches and understanding their limitations, in order to solve engineering problems and implement appropriate action
		EA5(m)	Ability to use fundamental knowledge to investigate new and emerging technologies
		EA6(m)	Ability to extract and evaluate pertinent data and to apply engineering analysis techniques in the solution of unfamiliar problems

	Design Design at this level is the creation and development of an economically viable product, process or system to meet a defined need. It involves significant technical and intellectual challenges and can be used to integrate all engineering understanding, knowledge and skills to the solution of real and complex problems. On graduation you will have the knowledge, understanding and skills to:		
	BEng and MEng		MEng only
D2(m)	Investigate and define the problem, identifying any constraints including environmental and sustainability limitations; ethical, health, safety, security and risk issues; intellectual property; codes of practice and standards		
D3(b)	Work with information that may be incomplete or uncertain, quantify the effect of this on the design	D3(m)	Work with information that may be incomplete or uncertain, quantify the effect of this on the design and, where appropriate, use theory or experimental research to mitigate deficiencies
D4(m)	Apply advanced problem-solving skills, technical knowledge and understanding, to establish rigorous and creative solutions that are fit for purpose for all aspects of the problem including production, operation, maintenance and disposal		

D5(m)	Plan and manage the design process, including cost drivers, and evaluate outcomes		
D6(m)	Communicate their work to technical and non-technical audiences		
		D7(m)	Demonstrate wide knowledge and comprehensive understanding of design processes and methodologies and the ability to apply and adapt them in unfamiliar situations
		D8(m)	Demonstrate the ability to generate an innovative design for products, systems, components or processes to fulfil new needs

	Engineering practice This is the practical application of engineering skills, combining theory and experience, and use of other relevant knowledge and skills. On graduation you will have achieved:		
	BEng and MEng		MEng only
P3(m)	Ability to apply relevant practical and laboratory skills		
P8(m)	Ability to work with technical uncertainty		
P10(m)			Ability to apply engineering techniques taking account of a range of commercial and industrial constraints

	Additional general skills On graduation you will have developed transferable skills, additional to those set out in the other learning outcomes, that will be of value in a wide range of situations, including the ability to:		
	BEng and MEng		MEng only
G1(m)	Apply your skills in problem solving, communication, working with others, information retrieval, and the effective use of general IT facilities		
G2(m)	Plan self-learning and improve performance, as the foundation for lifelong learning/CPD		
G3(b)	plan and carry out a personal programme of work, adjusting where appropriate	G3(m)	Monitor and adjust a personal programme of work on an on-going basis
G4(m)	Exercise initiative and personal responsibility, which may be as a team member or leader.		

In addition, if you take the Industrial Placement Year you will be able to:

- Analyse, evaluate and interpret information from projects and, apply your theoretical knowledge in unfamiliar situations to solve problems
- Exercise professional judgement in a working context and evaluate and review your performance in the context of an engineering workplace.
- Identify areas for personal and career development and how these can be addressed
- Understand the different roles within a team and have the ability to exercise leadership and demonstrate effective understanding of time and project management skills.
- Apply your knowledge and skills taking account of commercial and industrial constraints.
- Understand the importance of health and safety in an engineering workplace and evidence continuous professional development by the use of a personal learning log.

Teaching and Learning Methods

Intellectual skills are developed through the teaching and learning activities. Analysis and problem solving skills are further developed through regular problem sheets issued by module lecturers and through small group teaching. Experimental, research and design skills are further developed through coursework exercises, laboratory work, and design and research projects. Individual feedback is provided on all work submitted. Appreciation of the practical applications of these skills is provided by interaction with industry through visiting lectures and industrial visits.

Assessment methods
Analysis and problem solving skills are assessed through unseen written examinations and problem based exercises. Experimental, research and design skills are assessed through laboratory reports, coursework exercises, project reports and oral presentations. Skills are formatively assessed through written reports and oral presentations, practical and laboratory reports. Summative assessment is through unseen examinations, extended essays, written reports and oral presentations, and completion of a research project.

Programme Structure

The University uses the European Credit Transfer Scheme (ECTS) to indicate the approximate amount of time a typical student can expect to spend in order to complete successfully a given module or programme, where 1 ECTS indicates around 20 nominal hours of study. Previously, Credit Accumulation and Transfer Scheme (CATS) points were used for this purpose where 1 CATS credit was 10 nominal hours of study. The University credit accumulation and transfer scheme is detailed at https://www.southampton.ac.uk/calendar/sectioniv/index.page..

In order to allow students to settle in to a University learning style, Part I is not structured in semesters and the majority of assessment occurs towards the end of the academic year. The teaching in Parts II to IV is generally structured as two semesters with an assessment session at the end of each. You study modules comprising 60 ECTS (120 CATS) in each of Parts I (level 4), II (level 5) and III (level 6), and IV (level 7). There are several degree possibilities in the programme of study:

- Three years full-time, leading to a Bachelor of Engineering (BEng).
- Four years full-time, leading to a Bachelor of Engineering with Industrial Placement Year (BEng).
- Four years full-time, leading to a Master of Engineering (MEng).
- Five years full-time leading to a Master of Engineering with Industrial Placement Year (MEng)

In addition there are the following exit points:

- Certificate of Higher education, following successful completion of Part I.
- Diploma of Higher education, following successful completion of Part II.
- Ordinary Degree of BSc Engineering (Ordinary), following successful completion of at least 150 ECTS (300 CATS), including 30 ECTS (60 CATS) at level 6.

Each module is a self-contained part of the programme of study and carries a credit rating. Your contact hours will vary depending on your module/option choices. Full information about contact hours is provided in individual module profiles

Part I is assessed through an integrated set of assessments under the regulations at https://www.southampton.ac.uk/calendar/sectionvi/feps.page and in Appendix 3 of this document. In Parts II and III, progression through the programme and classification of degrees are regulated by the standard university progression and classification rules which may be found in section IV of the University Calendar (https://www.southampton.ac.uk/calendar/sectioniv/index.page).

The duration of all the programmes may be extended by one year through enrolment on the Engineering Foundation Year.

The Programme Structure is outlined in Appendix 1.

Typical course content

Acoustical Engineers have to know, understand and be able to use the same full range of engineering fundamentals as any other engineer so many of the modules you take in Parts I & II will be studied alongside Mechanical, Aeronautical, Ship Science and Civil Engineering students. Many of the practical exercises that you undertake to develop skills such as design and computer modelling, however, will be adapted from real-life acoustics, vibration and signal processing problems, such as designing a loudspeaker. You will also take specialised modules in Acoustics,

Audio and Signal Processing that will prepare you for deeper study and application of these subjects in Part III.

In Part III & Part IV you can choose from a wide range of specialised modules such as Ocean Acoustics & Biomedical Ultrasound, Musical Instrument Acoustics and Applied Audio & Signal Processing. Project work is a significant feature with an Individual Project in Part III and a Group Design Project in Part IV. The latter can be multi-disciplinary so you could be working in a team with Aeronautical, Mechanical or other Engineering students. Having studied the Engineering fundamentals together in Parts I & II you will have a common basis on which to build your collaboration – this type of cross-disciplinary working is a really important skill for Acoustical Engineers because acoustic and vibration problems occur in so many different engineering contexts. This feature of the programme is something that employers of our graduates particularly appreciate.

As with all taught programmes at the University of Southampton, a flexible and inclusive approach to learning and teaching allows any student who meets the entry requirements to access the curriculum and demonstrate achievement of all the indented outcomes regardless of disability.

The programme follows university guidelines for inclusivity and flexibility and provides and array of teaching and learning approaches that will enable any student who meets the entry requirements to access the curriculum and demonstrate achievement of all the intended learning outcomes.

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 as set out in the University Calendar.
https://www.southampton.ac.uk/calendar/sectioniv/index.page

Additional regulations applying to the assessment of Part I of your programme, the Industrial Placement Year and our other MEng regulations may be found here:
https://www.southampton.ac.uk/calendar/sectionvi/feps.page

Intermediate exit points (where available)

Qualification	Minimum overall credit in ECTS credits	Minimum ECTS Credits required at level of award
Bachelor of Science (Ordinary)	at least 150	30
Diploma of Higher Education	at least 120	45
Certificate of Higher Education	at least 60	45

Programme outcomes for different exit points

Level 4 (Part I)	You will have a sound knowledge of the basic concepts in Mechanical and Acoustical Engineering, and will have learned how to take different approaches to solving problems. You will be able to communicate accurately, and will have the qualities needed for employment requiring the exercise of some personal responsibility.
Level 5 (Part II)	You will have developed a sound understanding of the principles involved in a range of core Mechanical and Acoustical Engineering subjects, and will have learned to apply those principles more widely. Through this, you will have learned to evaluate the appropriateness of different approaches to solving

	problems. You will have the qualities necessary for employment in situations requiring the exercise of personal responsibility and decision-making.
Level 6 (Part III) BEng	You will have developed an understanding of a complex body of knowledge relevant to Acoustical Engineering, some of it at the forefront of current developments. Through this, you will have developed analytical techniques and problem-solving skills that can be applied to a range of engineering problems, and learned to communicate these effectively. As an Honours graduate you will be able to evaluate evidence, arguments and assumptions, and to reach sound judgements. You should have the qualities needed for employment in situations requiring the exercise of personal responsibility, and decision-making in complex and unpredictable circumstances.
Level 7 (Part IV) MEng	Much of the study undertaken at Masters level reflects research at the forefront of Acoustical Engineering. You will have shown originality in the application of knowledge, and you will understand how the boundaries of knowledge are advanced through research. You will be able to deal with complex issues both systematically and creatively, and show originality in tackling and solving problems individually and as part of a team. You will have the qualities needed for employment in circumstances requiring sound judgement, personal responsibility and initiative, in complex and unpredictable professional environments.

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.
- 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
- Careers 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 (18.00-08.00)a Centre for Language Study, providing assistance in the development of English language and study skills for non-native speakers.
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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:

- student handbook for Acoustical Engineering students.
- introductory sessions for all years of the programme.
- library information retrieval seminar.
- School library containing specialist acoustical engineering textbooks and theses
- workshop training.
- group tutorials in Parts I and II of the programme, typically 20- 30 in a class.
- jaboratory classes in Parts I and II, typically 12 to 20 students in smaller groups of 2-4 for each experimental set-up.
- Engineering Development and Manufacturing Centre (EDMC) equipped with a range of workshop equipment, CAD/CAM.
- engineering and specific software available on all computers.
- Personal Academic Tutors to assist them with personal problems and to advise on academic issues (contact maintained during periods of studying abroad). A senior tutor is also available.
- access to academic staff through an open door policy as well as timetabled tutor meetings, appointment system and e-mail.
- research seminars and invited lectures.
- Student Office for the administration of your programme.

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 Scrutiny Groups for programme validation
- taking part in programme validation meetings by joining a panel of students to meet with the Scrutiny Group

The ways in which the quality of your programme is checked 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/inspection
- the national Research Excellence Framework (our research activity contributes directly to the quality of your learning experience)
- institutional Review by the Quality Assurance Agency

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

- discipline, and School boards, convening at the end of each academic year, which consider the outcomes of each module's evaluation.
- moderation of examination papers, coursework and projects, both internally and externally.
- annual examiners' meetings and examiners' boards.
- annual programme and module reviews considering your feedback from all sources, feedback from teaching panels, external examiners and other bodies and student performance.
- periodic meetings of the School Industrial Advisory Board

- response to results from the National Student Survey
- revalidation by the University at least every five years.

Note that quality assurance of any part of the programme taken abroad, where applicable, is subject to the quality procedures of the relevant institutions. These procedures are subject to periodic monitoring by members of staff of the Faculty of Engineering and Physical Sciences.

Career Opportunities

Many of our graduates embark on successful careers in the field of acoustic consultancy, R&D in acoustics at some of the largest UK employers (JLR, Rolls-Royce and Dyson, for example) in addition to staying in higher education to study for a higher degree. We support voluntary summer placements in acoustic consultancy through the university careers office in addition to hosting a day for employers to come and present their companies, inspect the student CVs and also conduct formal interviews for either summer placements or permanent graduate positions. Our students also receive free membership of the Institute of Acoustics, which disseminates job opportunities related to the discipline.

External Examiner(s) for the programme

Name Professor David Sharp
Institution. Open 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 (or other appropriate guide) or online at https://www.southampton.ac.uk/studentservices/academic-life/faculty-handbooks.page.

Appendix 1:
Programme Structure

The information within this Appendix is liable to change in minor ways from year to year. It is accurate at the time of writing.
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.

Part 1

The first year provides a background in engineering science, emphasising acoustical engineering aspects. All modules below are at level 4 and are core, i.e. all required assessments must be taken and passed at the required pass mark. They total 60 ECTS (120 CATS). No option modules will be undertaken in Part I. All modules in Part I are taught over two semesters with any formal examinations held at the end of semester 2. Feedback on progress is provided throughout the year in many ways including via laboratory work, example sheets, tests and coursework.

For information on summative assessment of Part I please see Appendix 3

Over both semesters	ECTS Credit Points (CATS in brackets)
FEEG1001Design and Computing	15(30)
FEEG1002 Mechanics, Structures and Materials	15(30)
FEEG1003Thermofluids	7.5(15)
FEEG1004 Electrical and Electronic Systems	7.5(15)
ISVR1032 Acoustics I	7.5(15)
MATH1054 Mathematics for Engineering and the Environment	7.5(15)

Part II

The second year covers the main acoustical engineering subjects with modules tailored to the discipline. Modules totally 60 ECTS (120 CATS) are taken over two semesters. At the end of Part II you have the opportunity to select specialist themes or to follow an interdisciplinary programme.

Modules at level 5 totalling 60 ECTS (120 CATS) **credits; all modules compulsory**

Module Code	Module Name	Semester Taught	ECTS Credit Points (CATS in brackets)
FEEG2001	Systems Design and Computing	Full Year	7.5(15)
FEEG2002	Mechanics Machines and Vibration	2	7.5(15)
FEEG2003	Fluid Mechanics	2	7.5(15)
FEEG2004	Electronics Drives and Control	1	7.5(15)
FEEG2006	Engineering Management and Law	Full Year	7.5(15)
ISVR2041	Audio and Signal Processing	1	7.5(15)
ISVR2042	Acoustics II	2	7.5(15)
MATH2048	Mathematics for Engineering and the Environment	1	7.5(15)

Students on the BEng or MEng Acoustical Engineering with Industrial Placement Year programme will undertake their placement between Parts II and III. They may not start their placement until Part II has been passed. Should the placement not be passed students can transfer to the BEng or MEng Acoustical Engineering programme as applicable.

Part III

MEng/BEng 60 ECTS (120 CATS)

COMPULSORY MODULES: Module Code	Module Name	Semester	ECTS Credit Points (CATS in brackets	Level
FEEG3003	Individual Project (core)	1&2	15(30)	6
ISVR3059	Acoustical Engineering Design	1	7.5(15)	6
ISVR3061	Human Responses to Sound and Vibration	2	7.5(15)	6
ISVR3064	Noise Control Engineering	1	7.5(15)	6

Optional subjects are to be selected from the following lists. Guidance will be given on the choice of options, which will depend on the timetable constraints, students' interests, aptitude, chosen individual project and career aspirations. Where appropriate other engineering or maths modules may be substituted for optional modules with the agreement of the Programme Lead.

All Part III Options are each worth 7.5 ECTS (15 CATS) points. Some are at levels 6 or 7 and no more than 15 ECTS (30 CATS) credits at level 7 can be taken in Part III. Furthermore no more than 7.5 ECTS (15 CATS) credits may be taken in modules with codes other than ISVR, FEEG or SESM.
Please note, you may only select one language module per year.

Semester I Options: Choose 1 from: Module Code	Module Name	Level
FEEG3001	Finite Element Analysis in Solid Mechanics	6
ISVR6130	Signal Processing	7
ISVR3070	Ocean Acoustics & Biomedical Ultrasound	6
LANGxxxx	Language	6
ISVR6137	Electroacoustics	7
SESM3030	Control and Instrumentation	6
SESM3031	Automobile Systems	6

Semester II Options: Choose 2 from: Module Code	Module Name	Level
FEEG3002	Vehicle Powertrain, Noise and Vibration	6
FEEG6011	Architectural and Building Acoustics	7
ISVR3063	Musical Instrument Acoustics	6
ISVR3071	Advanced Audio Signal Processing	6
ISVR3072	Mathematical Methods of Acoustics	6
ISVR6138	Biomedical Applications of Signal and Image Processing	7
ISVR6139	Active Control of Sound and Vibration	7
ISVR6142	Numerical Methods for Acoustics	7
ISVR6146	Engineering Vibration Practice	7
LANGxxxx	Language	6

Part IV
MEng 60 ECTS (120 CATS)

No more than 15 ECTS (30 CATS) points at level 6 to be included in the year total of 60 ECTS (120 CATS) points, all other modules and project are at level 7. Level 6 modules can only be chosen if the same number of Level 7 modules have been taken in Part III. No modules taken in Part III can be chosen again in Part IV.

Module Code	Module Name	Semester	ECTS Credit Points (CATS in brackets	Level
FEEG6013	Group Design Project (core)	1&2	22.5(45)	7
ISVR6147	Professional Aspects of Engineering	1&2	7.5(15)	7

Please note you may only select one language module per year.

Semester I Options (all 7.5 ECTS): Choose 2 from:

Module Code	Module Name	Level
FEEG3001	Finite Element Analysis in Solid Mechanics	6
ISVR3070	Ocean Acoustics & Biomedical Ultrasound	6
ISVR6130	Signal Processing	7
ISVR6137	Electroacoustics	7
SESM3030	Control and Instrumentation	6
LANGxxxx	Language	7
SESM3031	Automobile Systems	6

Semester II Options (all 7.5 ECTS): Choose 2 from:

Module Code	Module Name	Level
FEEG3002	Vehicle Powertrain, Noise and Vibration	6
FEEG6004	Aeroacoustics	7
FEEG6011	Architectural and Building Acoustics	7
ISVR3063	Musical Instrument Acoustics	6
ISVR3071	Advanced Audio Signal Processing	6
ISVR3072	Mathematical Methods of Acoustics	6
ISVR6138	Biomedical Applications of Signal and Image Processing	7
ISVR6139	Active Control of Sound and Vibration	7
ISVR6142	Numerical Methods for Acoustics	7
ISVR6146	Engineering Vibration Practice	7
LANGxxxx	Language	7

Appendix 2: Additional Costs

Students are responsible for meeting the cost of essential textbooks, and of producing documents such as essays, assignments, laboratory reports and dissertations as 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 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		Students 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 species permissible models from time to time and these may be purchased from any source.
Stationery		You will be expected to provide your own day-to-day stationary items, e.g. pens, pencils, notebooks, etc). The third year module FEEG3003 Individual Project requires you to print an Al portrait poster on paper. The typical cost for this is in the range £5 to £20.
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	Design equipment and materials:	We provide a wide range of resources to support project based modules and activities and these will allow you to complete your assessed exercises to the highest standard. However, you may wish to customise your project by purchasing additional resource e.g. alternative manufacturing materials, electronic components, etc. You may also incur additional costs for printing e.g. large format drawings.
Printing and Photocopying Costs		In some cases, coursework and/or projects may be submitted electronically. Where it is not possible to submit electronically students will be liable for printing costs. Students are expected to cover the costs associated with the printing of drawings and graphic presentations. These are typically expected to be of the order of £20 - 50 per student. The third year module FEEG3003 Individual Project requires you to print an Al portrait poster on paper at a typical cost of £20. A list of the University printing costs can be found here: https://www.southampton.ac.uk/isolutions/students/printing-for-students.page
Travel and subsistence		For additional costs related to travel and subsistence for the Industrial Placement Year, please refer to the module profile for FEEG3009
Optional visits		Some modules may include additional optional visits. You will normally be expected to cover the cost of travel and admission, unless otherwise specified in the module profile. For costs related to study abroad please see the relevant module profile.

Appendix 3: Part 1 Summative Assessment

The table below shows the summative assessment structure:

Schedule A			
	Approximate Timing	**Pass Mark**	**Repeat Assessment mode**
Multiple Choice Exam: Engineering Fundamentals	Semester 2 exam period. 2 hours	60%	Internal & External
Long Answer Exam: Engineering Problem Solving	Semester 2 exam period. 2 hours	40%	Internal & External
Discipline Specific Assessment	Semester 2 exam period	40%	Internal & External
Mathematics Exam	Semester 2 exam period. 2 hours	40%	Internal & External
Schedule B			
	Timing	**Pass Mark**	**Repeat Assessment mode**
Assessment in Design	End of Semester 2	40%	Internal only
Laboratory Report	End of Semester 2	40%	Internal only
Technical Essay	End of Semester 2	40%	Internal & External

In order to pass Part I and progress to Part II you will need to pass all of the following summative assessments:

- A **technical essay**
- A **lab report** based on one of the lab classes you take as part of your modules.
- A **Summative Design Assessment** that you will undertake as part of your Design module.
- A **Mathematics Exam** on the material you study in MATH1054.
- A **Discipline-Specific Assessment** of the content of you discipline-specific module. This will be set towards the end of semester 2 and may take the form of an exam or a piece of coursework.
- A **Multiple Choice Exam** to test your knowledge of engineering fundamentals from FEEG1002 Mechanics Structures & Materials (Statics 1, Statics 2 and Materials), and FEEG1003 Thermofluids.
- A **Long Answer Exam** to test your ability to solve problems using the concepts from FEEG1002 (Statics 1, Dynamics), FEEG1003 and FEEG1004

The regulations relating to failure in these assessments may be found in Section VI of the University Calendar