

Programme Specification

MSc Optical Fibre Technologies 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	1 Year
Accreditation details:	N/A
Final award:	Master of Science
Name of award:	MSc Optical Fibre Technologies
Interim Exit awards:	Postgraduate Diploma, Postgraduate Certificate
FHEQ level of final award:	Level 7
UCAS code:	N/A
QAA Subject Benchmark or other external reference:	The UK Quality Assurance Agency's National Qualifications Framework for Higher Education Qualifications (FHEQ)
Programme Coordinator:	Dr M. Ibsen
Date specification was written:	07/06/2015
Date specification last updated	08/03/2017

Programme Overview

Brief outline of the programme

The Optoelectronics Research Centre (ORC) has a leading international reputation for its research in optical fibre technologies. Our research in these areas range from specialised fibre design and fabrication, passive fibre devices, fibre lasers, and application of these fibre based technologies in areas as diverse as optical sensing, manufacturing, medicine, defence and telecommunication. This MSc programme offers an advanced postgraduate education covering many of the fundamental concepts of these optical fibre technologies, and their application in real-world settings. Notable features of the programme includes that students will gain experience of working in our advanced optical fibre research laboratories, including the new Mountbatten Clean Room complex, and that students also have the possibility of following optional courses in the Southampton Business School on how best to link research with enterprise and entrepreneurship.

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

The program consists of eight taught modules over the first two semesters of the year, and a research project in the third semester. Each module included in the programme consists of weekly lectures and tutorials by the module lecturers. Teaching methods include; directed reading, lectures, problem-solving activities and private/guided study. There are also practical laboratory sessions to directly demonstrate and put into context the taught technologies, incl. live demonstrations of e.g. fibre preform manufacturing and fibre drawing. The final project will involve hands-on training and working on your chosen topic area of optical fibre technology.

More business related modules will involve external visits to local companies and direct learning from, and interaction with, Entrepreneurs and company executives.

Assessment

The taught material will typically be assessed via a number of fortnightly problem sheets covering the material in each module, via group presentations, via a written examination of 2-2.5 hour duration at the end of each semester, via case-studies following visits to offsite companies and businesses (typically ~3000 words) and short reports (~1500 words), and via a final project dissertation (~15000 words) and conference-style final project presentation to all the students on the programme.

Educational Aims of the Programme

The aims of the programme are to:

1. Provide you with advanced knowledge of optical fibre technologies.
2. Give you the opportunity to work in a research-led environment using state-of-the-art facilities.
3. Develop your research skills applicable to a career in research and development.
4. Stimulate your interest in the subject using a variety of teaching and learning methods.

Programme Learning Outcomes

Knowledge and Understanding

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

- A1. Scientific and technological principles underlying a range of optical fibre technologies.
- A2. Specialist tools and techniques used to design, construct, measure, and analyse a range of optical fibre technologies.
- A3. Current research issues relevant to optical fibre technologies.

Teaching and Learning Methods

You will have a variety of opportunities to achieve these learning outcomes. Learning and teaching methods include:

- Staff-led lectures, demonstrations, and seminars.
- Directed reading.
- Student-led seminars and presentations.
- Technical reports, including literature searches and surveys.
- Specification, design, analysis, implementation and verification exercises.
- Group design exercises, presentations and reports.
- Revision for written examinations.
- Staff and post-graduate supervision of your research project.

Assessment methods

Your achievement is assessed as follows. In the case of staff-led lectures and seminars, your knowledge and understanding (outcomes A1-3) is assessed through written examinations and technical reports. Your understanding of research issues and your ability to locate and present technical information (outcome A3) is assessed through student-led presentations, technical reports and written examinations, and additionally your dissertation. The research project is assessed through your dissertation, which must include a significant literature survey to set the context for your work, a review of your progress relative to your initial plan, and a critical evaluation and reflection of the generated results.

Subject Specific Intellectual and Research Skills

Having successfully completed this programme you will be able to:

- B1. Use specialist tools and techniques to design, construct, measure, and analyse a range of optical fibre technologies.
- B2. Model, simulate and analyse the behaviour of (sub-) systems at an appropriate level of detail.
- B3. Acquire new knowledge and understanding through critical reading of research material.
- B4. Apply such knowledge and understanding to specialist design problems.

Teaching and Learning Methods

- Staff-led lectures, demonstrations, and seminars.
- Directed reading.
- Student-led seminars and presentations.
- Technical reports, including literature searches and surveys.
- Specification, design, analysis, implementation and verification exercises.
- Group design exercises, presentations and reports.
- Revision for written examinations.
- Staff and post-graduate supervision of your third semester research project.

Assessment methods

Your achievement is assessed as follows. Your understanding of research issues and your ability to locate and present technical information (outcome B3) is assessed through student-led presentations, technical reports and written examinations, and additionally your dissertation. Your ability to design and implement optical fibre systems, perhaps using novel technologies, (outcomes B1, B2, B4) is developed through design exercises, and additionally your research project, and assessed through technical reports and your dissertation. These reports are expected to include a rationale for your design and implementation decisions and evidence of verification activities. The research project (outcomes B3, B4) is assessed through your dissertation, which must include a significant literature survey to set the context for your work, a review of your progress relative to your initial plan, and a critical evaluation and reflection of the generated results.

Transferable and Generic Skills

Having successfully completed this programme you will be able to:

- C1. Use printed and on-line catalogues and databases to locate relevant technical information.
- C2. Present specialist technical information in written and verbal forms.
- C3. Work efficiently and effectively as a member of a project team.
- C4. Work independently on a significant research project.

Teaching and Learning Methods

- Directed reading.
- Student-led seminars and presentations.
- Technical reports, including literature searches and surveys.
- Specification, design, analysis, implementation and verification exercises.
- Group design exercises, presentations and reports.
- Staff and post-graduate supervision of your research project.

Assessment methods

Your achievement is assessed as follows. Your understanding of research issues, and your ability to locate and present technical information (outcomes C1, C2) is assessed through student-led presentations, technical reports and written examinations, and additionally your dissertation. Students are expected to maintain log-books that demonstrate their contribution to group projects (outcome C3), and these may also be assessed. The research project (outcomes C1, C2, C4) is assessed through your dissertation, which must include a significant literature survey to set the context for your work, a review of your progress relative to your initial plan, and a critical evaluation and reflection of the generated results.

Subject Specific Practical Skills (optional)

Having successfully completed this programme you will be able to:

- D1. Work competently with optical fibres and their related technology areas and to gather experimental data.
- D2. Be familiar with a range of fibre technologies, and their applications in real-world settings.
- D3. Process, analyse, and display data from optical experiments.
- D4. Perform practical tasks such as fusion splicing and fibre characterisation using recognised techniques.
- D5. Be familiar with recognised techniques for analysing and characterising optical fibre technologies.

Programme Structure

Typical course content

The program consists of eight taught modules (four per semester) over the first two semesters of the year, and a laboratory based research project in the third semester. During the first semester, three of your taught modules are compulsory and the fourth is an optional module to be chosen from a course within the area of basic physics/photonics, or a course on Entrepreneurship and Innovation studies offered within the Southampton Business School. The second semester has two compulsory modules covering more advanced concepts of fibre telecommunication and fibre sensor technologies, and two optional modules to be chosen from a laser technology based module, a module on MEMS based sensors and modules on global entrepreneurship and the basic aspects of innovation and technology transfer methods. The compulsory modules in Semester 1 cover the key concepts of optical fibre technology, which are central to all areas of modern fibre optics, including the key concepts of signal propagation in, and design and fabrication of optical fibres, fibre amplifiers, fibre lasers and fibre telecommunication systems, together with a practical course on optical laboratory skills and techniques. The optional modules available include parallel photonics technology concepts together with specialist modules on how to start and run a business in the field. The compulsory research project makes use of our world-class fibre laboratories and cleanroom resources of the ORC.

Special Features of the programme

A further feature of the programme is a 1-week Industry Showcase event, where executives from specialist companies in the field of optical fibre and other photonics technologies will provide information about the workings of running their particular businesses, and also the employment opportunities in them, and you have the opportunity to put together a presentation on the optical fibre and photonics market relevant to the individual companies discussing product development and sales opportunities.

Programme details

The programme has a number of compulsory and optional taught modules. Each successfully completed module is worth 15 CATS credits. The MSc requires you to complete 120 credits of taught modules. You then undertake a research project leading to a dissertation worth a further 60 credits.

The normal pattern of study is as follows:

Semester 1: Three compulsory modules covering the basics of optical fibre technologies together with laboratory and study skills training. Assessment is through a mixture of laboratory sessions, coursework and written examinations. There is also one optional module to be chosen between a module discussing the key elements and the basics of new business venturing and the entrepreneurship process, or modules covering more fundamental aspects of the light and matter, lasers and silicon photonics.

Semester 2: There are two compulsory modules providing deeper understanding of two specialist areas of optical fibre technology being fibre telecommunications and optical fibre sensors. These modules are assessed mainly through coursework and a written examination. There are also optional modules some of which focusses on parallel laser and sensor technologies, and on commercialisation aspects of optical fibre technologies.

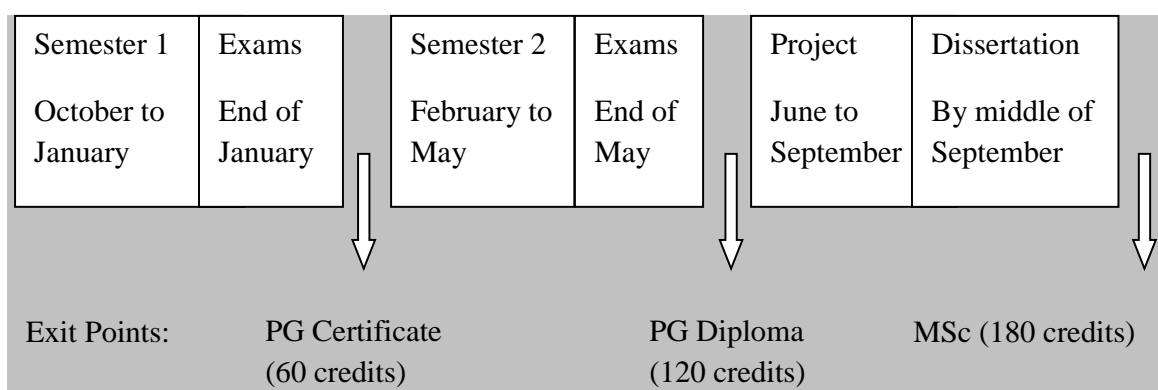
Semester 3: Following the successful completion of the taught component in the first two semesters of the programme, you will undertake a research project lasting around 15 weeks, involving cleanroom and optical laboratory work. This project is assessed by a 15,000 word dissertation and a conference-style group presentation.

Examinations are held at the end of Semester 1 (January) and at the end of Semester 2 (May) together with a conference-style presentation on the topic of your research project at the end of Semester 3 (Mid-September).

Your research project will enable you to explore in-depth some aspect of optical fibre technologies. The project builds on the taught courses and hands-on practical sessions from Semester 1 and 2. It provides training in methodology, techniques and skills essential for carrying out independent research and development tasks. Towards the end of Semester 2, you will be allocated a project supervisor with whom you will meet and agree a project brief and plan. These must be submitted to, and agreed by, the project coordinator. During the summer you will have weekly meetings with your supervisor or, if your supervisor is unavailable, a delegated deputy. Your dissertation is due by the middle of September and late submissions will be penalised, unless an extension to this deadline has been agreed beforehand in writing by the project coordinator. Immediately following the submission of the dissertation you will present the main achievement of your research project work to your fellow course student colleagues in a conference-style setting.

Students who have successfully completed 60 or 120 CATS credits worth of taught material may exit the programme with a Postgraduate Certificate or Postgraduate Diploma respectively.

The diagram below shows the normal programme structure and exit points.



The programme regulations are given in the University Calendar (<http://www.calendar.soton.ac.uk/>) and summarised in the student handbook.

Additional Costs

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

Progression Requirements

The programme follows the University's regulations for **Progression, Determination and Classification of Results: Undergraduate and Integrated Masters Programmes** as set out in the University Calendar (<http://www.calendar.soton.ac.uk/>)

Intermediate exit points (where available)

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
Postgraduate Diploma	at least 60	45
Postgraduate Certificate	at least 30	20

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:

- Tutorials - you will have a personal tutor whom you can meet on request for advice on your programme and choice of options, or for pastoral support.
- A mentor (usually a postgraduate student who has previously taken the course) that sees you weekly.
- Laser labs, and optical fibre clean room, and other research facilities, with a range of manuals.
- A website for each taught module, typically with teaching materials.

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.
- A national Research Assessment Exercise (our research activity contributes directly to the quality of your learning experience).
- Institutional Review by the Quality Assurance Agency.

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					
GCSE					
BTEC					
International Baccalaureate					
European Baccalaureate					

Postgraduate programmes

Qualification	Grade/GPA	Subjects requirements	Specific requirements
Bachelor's degree	2.1 Honours		
Master's degree			

Mature applicants

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

English Language Proficiency

Overall	Reading	Writing	Speaking	Listening
6.5	6.0	6.0	6.0	6.0

Career Opportunities

In completing an MSc degree at the ORC, you will work alongside some of the world's leading optical fibre technology scientists, and spend time conducting novel research in our state-of-the-art facilities, keeping up-to-date with current research-trends in optical fibre technology and photonics. Our students receive a solid grounding for their future careers in photonics related topics; over 600 ORC alumni work in strategic positions in the Photonics industry worldwide. MSc students are ideally suited to continuing in research PhD studies, or moving directly into the growing photonics industry, some of which you will experience directly during the Industry Showcase event and optional modules in the Southampton Business School as part of your MSc training.

External Examiner(s) for the programme

Name: Professor David Webb
Institution: Aston University, Birmingham, United Kingdom.

Students must not contact the 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 she/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

<http://www.orc.soton.ac.uk/mscof.html>

Appendix 1:

Programme Learning Outcomes document template

Module Code	Module Title	Knowledge and Understanding			Subject Specific Intellectual and Research Skills				Transferable and Generic Skills				Subject Specific Practical Skills				
		A1	A2	A3	B1	B2	B3	B4	C1	C2	C3	C4	D1	D2	D3	D4	D5
OPTO6008	Optical Fibre Technology I	x	x	x	x	x	x	x	x	x	x	x		x			x
OPTO6009	Optical Fibre Technology II	x	x	x	x	x	x	x	x	x	x	x		x			x
OPTO6023	Photonics laboratory	x	x	x	x	x		x	x	x	x	x	x		x	x	
PHYS3003	Light and Matter	x		x	x		x			x							
PHYS6024	Lasers	x	x	x		x	x		x	x							
OPTO6007	Silicon Photonics	x	x	x	x	x	x	x		x							
ENTR6033	Enterprise, Entrepreneurship and New Business Venturing			x	x	x	x	x		x	x	x					
OPTO6010	Advanced Fibre Telecommunication Technologies	x	x	x	x	x	x	x	x	x	x	x		x			x
OPTO6011	Optical Fibre Sensor Technologies	x	x	x	x	x	x	x	x	x	x	x		x			x
ELEC6208	MEMS Sensors and Actuators	x	x	x		x	x			x	x	x					
OPTO6002	Solid State and Ultrafast Lasers	x	x	x					x	x							
ENTR6037	Innovation and Technology Transfer		x	x	x	x	x	x		x	x	x					
ELEC6203	Introduction to MEMS		x	x		x	x	x		x	x	x					
MANG6278	Global Entrepreneurship		x	x	x	x	x	x		x	x	x					

ELEC6218	Signal processing		x	x		x	x	x		x	x	x					
MANG6339	Digital Entrepreneurship		x	x		x	x	x		x	x	x					
ELEC6219	Wireless and Mobile Networks		x	x		x	x	x		x	x	x					
OPTO6012	Project	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	X

Assessment mapping document template

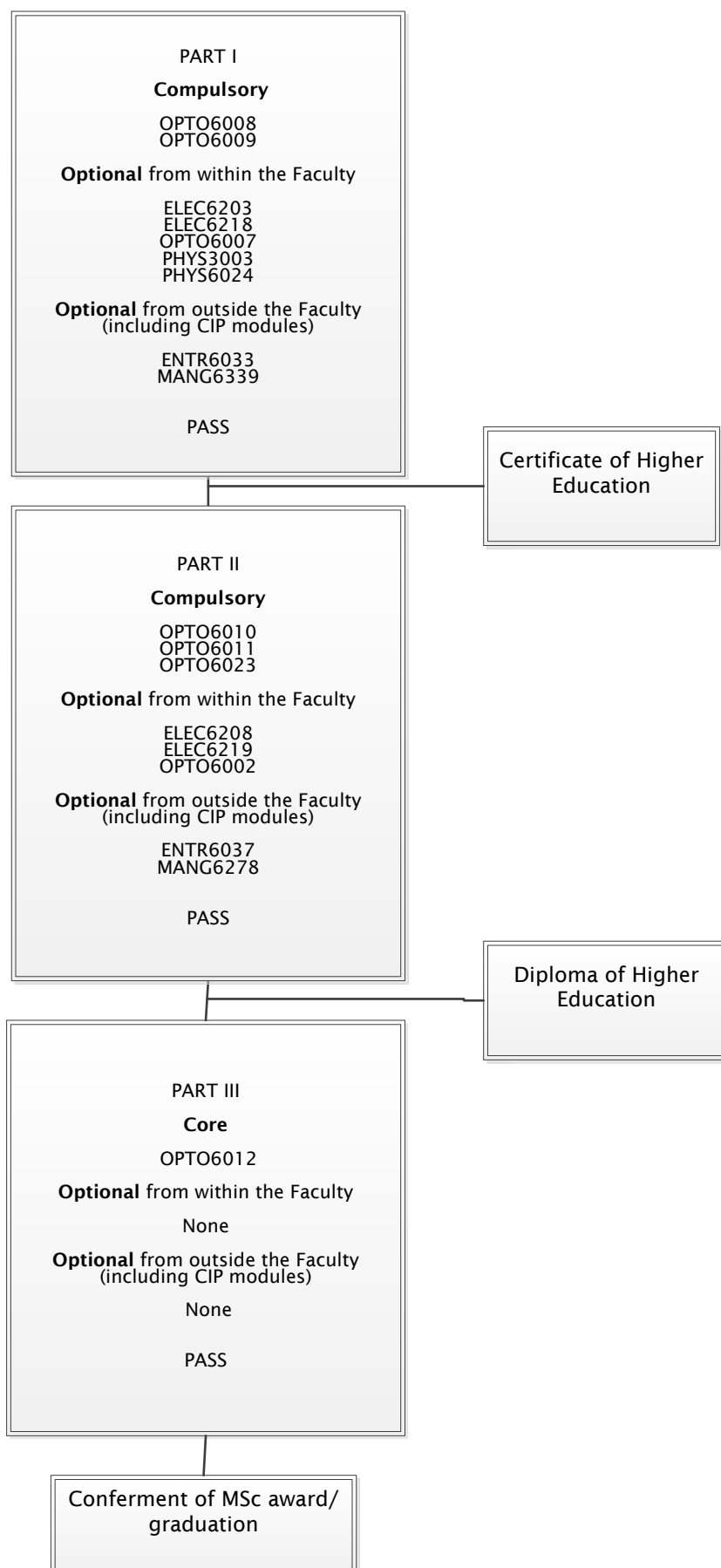
Module Code	Module Title	Assessment 1	Assessment 2	Assessment 3
OPTO6008	Optical Fibre Technology I	Assignments and problem sheets. 20%	Written examination - 2.5 hours. 80%	
OPTO6009	Optical Fibre Technology II	Assignments and problem sheets. 20%	Written examination - 2.5 hours. 80%	
OPTO6023	Photonics Laboratory	Laboratory work. 88%	Conference presentation. 12%	
PHYS3003	Light and Matter	Written examination - 2.0 hours. 100%		
PHYS6024	Lasers	Written examination - 2.0 hours. 100%		
OPTO6007	Silicon Photonics	Work sheets x2 25%	Written examination - 2.0 hours. 75%	
ENTR6033	Enterprise, Entrepreneurship and New Business Venturing	Group presentation - 30min. 25%	Individual written case-study. 37.5%	Individual written case-study. 37.5%
OPTO6010	Advanced Fibre Telecommunication Technologies	Assignments and problem sheets. 30%	Written examination - 2.5 hours. 70%	
OPTO6011	Optical Fibre Sensor Technologies	Assignments and problem sheets. 20%	Written examination - 2.5 hours. 80%	
ELEC6208	MEMS sensors & actuators	Design study 1 34%	Design study 2 33%	Design study 3 33%
OPTO6002	Solid State and Ultrafast lasers	Problem sheets – (Solid State Lasers) 15%	Problem sheets – (Ultrafast Lasers) 15%	Written examination - 2.5 hours. 70%
ENTR6037	Innovation and Technology Transfer	Group presentation. 25%	Individual written coursework. 37.5%	Individual written coursework. 37.5%

MANG6278	Global Entrepreneurship	Individual written assignment - (3000 words). 70%	Group presentation. 30%	
ELEC6218	Signal Processing	Deterministic filter design coursework 10%	Statistical signal-process. coursework 10%	Written examination - 2.0 hours 80%
MANG6339	Digital Entrepreneurship	Summative group presentation - 15 min 30%	Summative group report - 3000 words 70%	
ELEC6219	Wireless and Mobile Networks	Written examination - 2.0 hours 100%		
ELEC6203	Introduction to MEMS	Laboratory report 30%	Written examination 70%	
OPTO6012	Project	Project dissertation. Mid-term: 18% Final: 55%	Project presentation 18%	Industry Showcase. Written assignment. 9%

Revision History

1. Minor revisions (including title) 10 July 2007 (SCK)
2. New Brand added July 2008
3. Updated to reflect University restructuring June 2011 AB.
4. Revisions approved by Senate 19 June 2013 as part of new programme validation process
5. Minor changes made to form guidance on completion of Intended Learning Outcomes, and Learning outcomes and Assessment Mapping document template, for clarity; and changes to wording of support for student learning section, altering to second person throughout – agreed with the Chair and to be reported to UPC October 2013
6. Updated to new template October 2014
7. Changed to offer a total of only four new modules, and to include a further number of existing modules as options, December 2014.
8. Updated February 2015 to include feedback from the Programme Validation panel on 13 February 2015.
9. Changed to include OPTO6012 together with associated modifications to the module specification in place of OPTO6005, 7 June 2015.
10. CMA updates – CQA Team 07 September 2015
11. Update for 2016/17 – CQA Team Feb 2016
12. Updated 17 January 2017 to include 4 additional existing optional modules, and change of module code for PHYS6023 to OPTO6023.
13. FPC Approval – CQA Team 08 March 2017

MSc Optical Fibre Technologies programme structure



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.
Textbooks		Where a module specifies core texts these should generally be available on the reserve list in the library. However due to demand, students may prefer to buy their own copies. These can be purchased from any source. Some modules suggest reading texts as optional background reading. The library may hold copies of such texts, or alternatively you may wish to purchase your own copies. Although not essential reading, you may benefit from the additional reading materials for the module.
Equipment and Materials Equipment	Art Equipment and Materials: Drawing paper; painting materials; sketchbooks	
	Art Equipment and Materials: Fabric, Thread, Wool	
	Design equipment and materials:	
	Excavation equipment and materials:	
	Field Equipment and Materials:	
	Laboratory Equipment and Materials:	
	Medical Equipment and Materials: Fobwatch;	

Main Item	Sub-section	PROGRAMME SPECIFIC COSTS
	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. A list of the University printing costs can be found here: [insert link to relevant page].
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		