UNIVERSITY OF SOUTHAMPTON

Programme Specification

Title of programme: MRes in Stem Cells, Development and Regenerative Medicine 2016-17

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 following standard progression for a full time student
Accreditation details	None
Final award	Master of Research (MRes)
Name of award	Master of Research in Stem Cells, Development & Regenerative Medicine (90 ECTS credits)
Interim Exit awards	Postgraduate Certificate in the Theory of Stem Cells, Development & Regenerative Medicine(30 ECTS credits)
	Postgraduate Certificate in Research Methods (40 ECTS credits)
	Postgraduate Diploma in Stem Cells, Development & Regenerative Medicine (60 ECTS credits)
	Postgraduate Diploma in Research Methods (70 ECTS credits)
FHEQ level of final award	Level 7
UCAS code	N/A
QAA Subject Benchmark or other external reference	N/A
Programme Lead	Dr Franchesca Houghton
Date specification was written	01/10/2015
Date Programme was validated	
Date specification last updated	

Programme Overview

Brief outline of the programme
The programme offers the opportunity to develop advanced scientific, research and transferable skills required to become an independent researcher in Stem Cells, Development & Regenerative Medicine.

Students will undertake taught modules in Research Skills in Biomedical Sciences, Stem Cells, Development & Regenerative Medicine, and Advanced Scientific Skills. Students will also undertake two research projects to develop a broad range of laboratory skills and experience working in different research environments. The students will develop core research skills including critical appraisal, scientific writing, written, oral and poster presentation, statistical analysis and a range of key techniques used in Translational Biomedical research. The programme leads to an MRes in Stem Cells, Development & Regenerative Medicine.

Learning and teaching
A blend of learning and teaching methods are used in order to help students develop a broad range of skills. In the Stem Cells, Development & Regenerative Medicine module students are introduced to core concepts through a series of facilitator-led workshops focussing on key research publications. Students will be asked to critically appraise primary research papers and develop the skills required to understand, critique and interpret research findings. Integral to these workshops is the requirement for students to present their thoughts and participate in group discussions with both their peers and academic facilitators. The research skills in biomedical sciences (RSBS) module uses a combination of taught and practical sessions to introduce students to the core concepts underlying statistical analysis and study design supporting students in handling their own data and critically appraising data published by others. In the Advanced Scientific Skills Module a series of taught and practical sessions will introduce students to additional core concepts used in Biomedical Sciences such as handling large data sets. In addition, key principles required to relay research to both a scientific and lay audience will be introduced. Students will be asked to write both a scientific and lay abstract for a published primary paper and to give a research presentation suitable for a lay audience. Thus, students will develop the skills required to communicate their research to both scientists and non-specialists. In the two research projects, students will be introduced to a range of laboratory skills gaining valuable practical experience of research methodology, experimental design, data interpretation, scientific writing, oral and poster presentations.

Assessment

Each module will be assessed as outlined in the individual module descriptions. Assessments include written assignments, oral presentations, group presentations, poster presentations, viva voce. The MRes in Stem Cells, Development and Regenerative Medicine may be awarded as a Pass, Merit or Distinction level.

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 programme aims to provide advanced professional training leading to the appropriate practical and analytical skills required to pursue independent research in Stem Cells, Development & Regenerative Medicine. The programme will be intellectually led while paying close attention to practical training in state-of-the-art technologies. Advanced courses in specific areas of stem cell biology and their translational potential will develop your understanding of regenerative medicine. Research projects undertaken in leading stem cell laboratories will allow you to establish a broad base of technical expertise and first-hand experience of data generation, analysis and interpretation. Generic training in research skills, statistics plus a strong emphasis on critical analysis in the advanced courses will allow you to evaluate, integrate, update and articulate knowledge at the cutting edge of your field. The Advanced Scientific Skills Module will introduce students to additional core concepts used in medical research such as handling large data sets. In addition, key principles required to communicate scientific research to both scientists and non-specialists will be developed.

The aims of the programme are to:

- Provide advanced courses with which to develop your knowledge and analytical skills in specific areas of stem cell science and regenerative medicine.
- Enable you to become competent in a broad range of state-of-the-art biomedical techniques.
- Undertake critical evaluation of current research, propose new hypotheses and evaluate methodologies.
- Encourage you to scrutinise and debate issues related to research design, instrument selection and the evidence base for currently held ideas.
- Undertake research utilising sound methodological principles, which are appropriate to the advancement of scientific understanding and the promotion of new approaches to the treatment of disease and illness.
- To apply knowledge, analytical and critical thinking skills to develop sound judgements about data and to integrate research evidence into all aspects of model making and hypothesis building.
- Enable you to justify personal and professional decisions through critical evaluation and synthesis of relevant theories, empirical evidence and personal research experience.
- To present your own research findings, as well as those of others in a lucid and scholarly manner.
- To enable you to become competent in communicating your research to both a scientific and lay audience.

Programme Learning Outcomes

Our programme provides opportunities for you to develop and demonstrate your knowledge and understanding, skills and other attributes in the following areas:

Knowledge and Understanding

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

A1. The practical issues involved in carrying out research
A2. The value, nature, uses and limitations of a range of research methods
A3. Research governance, ethics and data protection principles in scientific research
A4. The identification and justification of the value of different sources of data in drawing conclusions from published literature
A5. The molecular mechanisms regulating stem cell biology and how stem cells can be utilised for regenerative medicine

Teaching and Learning Methods

- Interactive lectures, student and tutor led seminars, journal club presentations, poster presentation, peer review, independent research, individual research supervision.

Assessment methods

Literature reviews, research proposal, journal club presentations- critical discourses, research project report, research project manuscript, poster and oral presentation of research project, viva.

Subject Specific Intellectual and Research Skills

Having successfully completed this programme you will be able to:

B1. Gather, analyse, synthesise, critically evaluate and interpret complex information
B2. Apply scientific and clinical concepts to the development of new ideas and the synthesis of hypotheses
B3. Analyse problems objectively using key theoretical perspectives and empirical research
B4. Devise valid and reliable methods and instruments for data and information collection in relation to your own research
B5. Demonstrate and exercise independence of mind and thought
B6. Defend your research findings in the context of already published work and established paradigms
B7. Communicate your research effectively to both lay and scientific audiences

Teaching and Learning Methods

- Interactive lectures, student and tutor led seminars, journal club presentations, poster presentation, peer review, independent research, individual research supervision.

Assessment methods

- Literature reviews, research proposal, journal club presentations- critical discourses, research project report, research project manuscript, poster and oral presentation pf research project, *viva voce*.

Transferable and Generic Skills

Having successfully completed this programme you will be able to:

C1. Work effectively, independently and with others in groups to achieve identified tasks
C2. Identify your personal learning needs effectively and develop personal development plans appropriate to your career aspirations
C3. Use information technology e.g. web/internet, databases, spreadsheets, statistical packages and word processing effectively
C4. Present, discuss and defend ideas, concepts and views effectively through written and spoken language
C5. Manage a research project with due attention to time and resource management
C6. Communicate your research effectively to both lay and scientific audiences
C7. Write effectively for both lay and scientific audiences

Teaching and Learning Methods

- Interactive lectures, student and tutor led seminars, journal club presentations, poster presentation, peer review, independent research, individual research supervision.

Assessment methods

- Literature reviews, research proposal, journal club presentations- critical discourses, research project report, research project manuscript, poster and oral presentation pf research project, *viva voce*.

Subject Specific Practical Skills (optional)

Having successfully completed this programme you will be able to:

D1. Analyse and reflect critically on your professional role in your area of research
D2. Apply investigative skills/methods of enquiry to researching problems and issues in your area of research

Disciplinary Specific Learning Outcomes (optional)

Not applicable

Intermediate awards Students who have not obtained 90 credits and therefore cannot receive an MRes may be eligible for a PGCert, or a PGDip. A minimum of 60 credits are required for a PGDip in Stem Cells, Development & Regenerative Medicine. A minimum of 70 credits are required for a PGDip in Research Methods. To obtain a PGCert in the Theory of Stem Cells, Development & Regenerative Medicine a minimum of 30 credits are required. A minimum of 40 credits are required for a PGCert in Research Methods. Students are required to have passed the assignments and met the specified learning outcomes.

Learning outcomes for intermediate awards
To achieve a PGCert in *Research Methods* the following learning outcomes must be achieved:
A1, A2, A3, A4, B1, B2, B3, B4, B5, B6, B7, C1, C2, C3, C4, C5, C6, C7, D1 and D2.

To achieve a PGCert in t*he Theory of Stem Cells, Development and Regenerative Medicine* the following learning outcomes must be achieved:
A2, A3, A4, A5, B1, B5, B6, B7, C1, C2, C3, C4, C6, C7 and D1.

To achieve a PGDip in *Research Methods* the following learning outcomes must be achieved:
A1, A2, A3, A4, B1, B2, B3, B4, B5, B6, B7, C1, C2, C3, C4, C5, C6, C7, D1 and D2.

To achieve a PGDip in *Stem Cells, Development and Regenerative Medicine* the following learning outcomes must be achieved:
A1, A2, A3, A4, A5, B1, B2, B3, B4, B5, B6, B7, C1, C2, C3, C4, C5, C6, C7, D1 and D2.

Programme Structure

Typical course content

The 12 month programme will lead to an MRes in Stem Cells, Development & Regenerative Medicine. The programme is modular in structure (Figure 1). Modules are either 10 or 30 ECTS credits at level 7. Each module has its own aims, learning outcomes and assessment criteria. A total of 90 ECTS credits must be successfully completed during the year which will consist of two research project modules, modules in Stem Cells, Development & Regenerative Medicine, Research Skills for Biomedical Sciences and Advanced Scientific Skills. Each of the 2 research project modules (1 & 2) will normally be expected to be performed with a different supervisor in a different research laboratory.
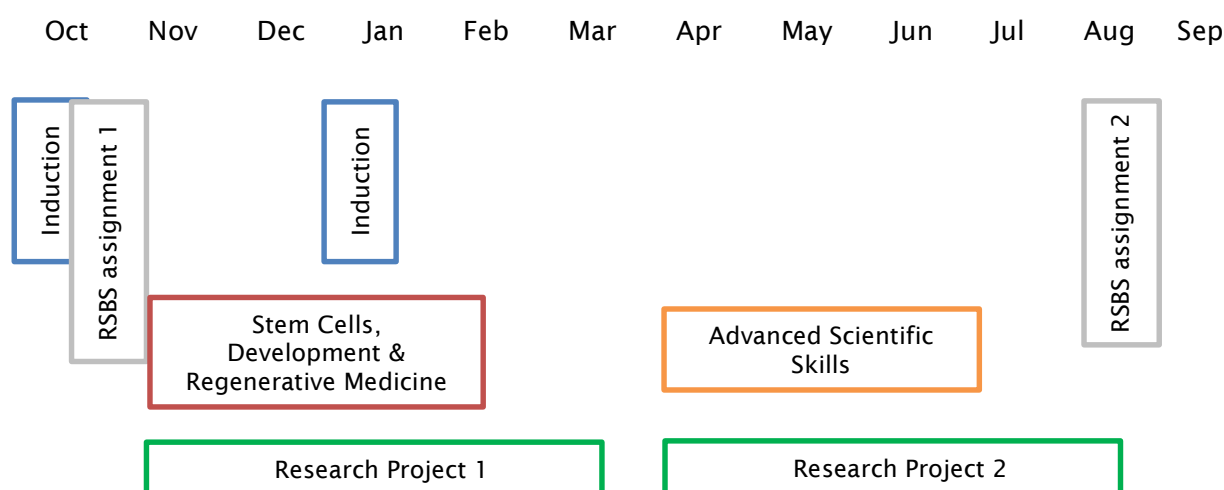

Figure 1: Schematic representation of the structure of the MRes in Stem Cells, Development & Regenerative Medicine

The MRes in Stem Cells, Development & Regenerative Medicine is offered as a full-time course. It should be completed in a 12 month period commencing in October of any given year. Should students fail any of the assessed modules, one further attempt will be allowed. Should the student be permitted a repeat year this must be undertaken internally. All modules must be passed to gain the Master of Research award.

Special Features of the programme
Not applicable

Programme details
Details of the modules (ie module specifications) can be downloaded from the Faculty of Medicine's website (www.southampton.ac.uk/medicine)

The MRes modules are:

Research Skills for Biomedical Sciences	10 ECTS
Stem Cells, Development & Regenerative Medicine	10 ECTS
Advanced Scientific Skills	10 ECTS
Research Project 1	30 ECTS
Research Project 2	30 ECTS

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 University regulations governing progression, determination and classification of results for standalone masters can be found in the University Calendar (Section IV – General Regulations) http://www.calendar.soton.ac.uk/sectionIV/progression-regs-standalonemasters.html

MRes and Intermediate exit points

MRes in Stem Cells, Development & Regenerative Medicine (90 ECTS)

Postgraduate Diploma in Research Methods (70 ECTS)
Postgraduate Diploma in the Stem Cells, Development and Regenerative Medicine (60 ECTS)

Postgraduate Certificate in Research Methods (40 ECTS)
Postgraduate Certificate in the Theory of Stem Cells, Development and Regenerative Medicine (30 ECTS)

You will be eligible for an MRes or intermediate exit award if you successfully complete the modules as follows:

Modules required for different awards

Module	MRes in Stem Cells, Development & Regenerative Medicine 90 Credits	PGDip in Stem Cells, Development & Regenerative Medicine 60 Credits	PGDip in Research Methods 70 credits	PGCert in the Theory of Stem Cells, Development & Regenerative Medicine 30 credits	PGCert in Research Methods 40 credits
Research Project 1	√		√		
Research Project 2	√		√		
Research Skills in Biomedical Sciences	√	√		√	
Stem Cells, Development & Regenerative Medicine	√	√		√	
Advanced Scientific Skills	√	√		√	
Research Project 1 **or** Research Project 2		√			√
Research Skills in Biomedical Sciences **or** Advanced Scientific Skills			√		√

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.
- Career 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.

The Students' Union provides
- 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:

- Personal computing facilities (laptop or desktop computer).
- Transferable and research skills training from the Faculty (PGR training programme, transferable skills programme) and University (Researcher Development and Graduate Centre).
- A specific nominated Personal Academic Tutor will be available throughout the programme to give pastoral support, in addition to the Faculty pastoral advisors.
- The Personal Academic Tutor will assist tutees with their Academic Needs Analysis throughout the programme and discuss potential career paths of interest. The standard University Academic Needs Analysis form will be used.
- The Programme Leader will support students with progress issues and decisions related to research options.

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 Research Programmes Committee OR providing comments to your student representative to feedback on your behalf.
- Serving as a student representative on Faculty Scrutiny Groups for programme validation
- Taking part in programme validation meetings by joining a panel of students to meet with the Faculty Scrutiny Group

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.

Postgraduate programmes

Qualification	Grade/GPA	Subjects requirements	Specific requirements
Bachelor's degree	2.1 (Upper second class) minimum	Biomedical/Biological Sciences or related subject	

Mature applicants
Applications from candidates with other non-standard qualifications will be considered on a case by case basis.

Recognition of Prior Learning (RPL)
The University has a **Recognition of Prior Learning Policy**
This programme does not provide admission through RPL

English Language Proficiency

[Faculties please choose from A, B, C or **D** from the following policy www.southampton.ac.uk/admissions-language and include the relevant box below. If you want to propose an English language level not described in the policy, please complete the table below using IELTS scores.

Overall	Reading	Writing	Speaking	Listening
IELTS 7.0 minimum	6.0 minimum	6.0 minimum	6.0 minimum	6.0 minimum

Career Opportunities

Students completing the programme will have developed extensive research skills and thus will be highly competitive to undertake PhD. They will also be well placed for a career in biosciences research either inside or outside of academia. Students will also have developed a range of transferable skills and thus suitable for a career in scientific writing. Other career opportunities might include managing clinical trials, research management, or working with research funders. Throughout the programme, students are encouraged to reflect on their career development and will have access to a number of workshops provided by Careers and Employability Service to help support them with this.

External Examiner(s) for the programme

Name Dr Stephen Richardson
Institution. University of Manchester

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 [give URL].
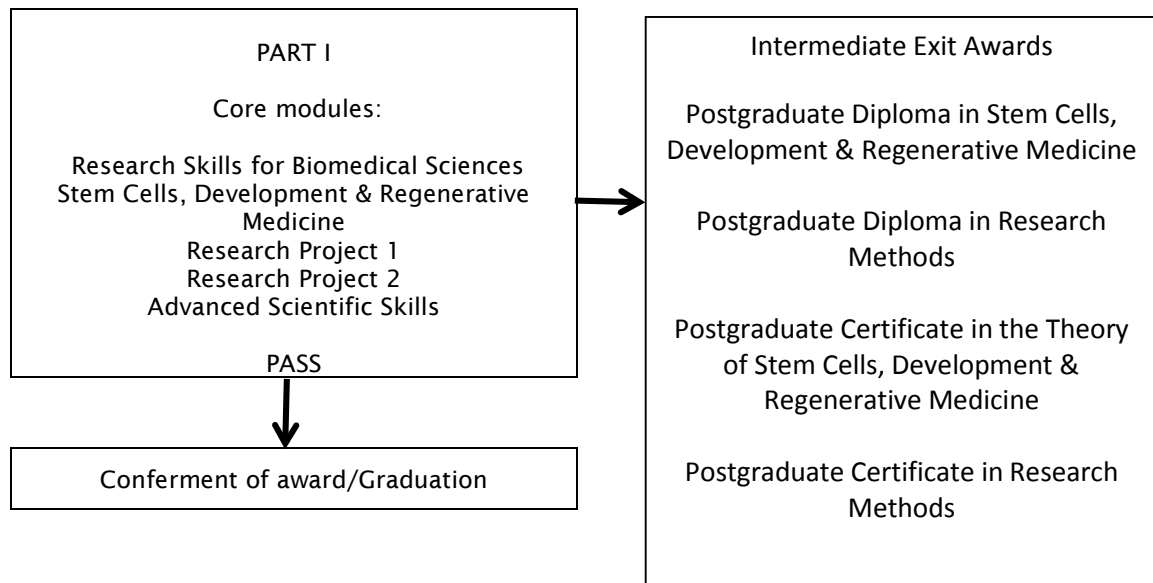
Appendix 1:

Learning outcomes and Assessment Mapping document template

Module code	Module Title	Knowledge and Understanding					Subject Specific Intellectual and Research Skills							Transferable/Key Skills							Subject Specific Practical Skills	
		A1	A2	A3	A4	A5	B1	B2	B3	B4	B5	B6	B7	C1	C2	C3	C4	C5	C6	C7	D1	D2
MEDI 6049	Research skills for Biomedical Science		X	X	X			X			X			X	X	X	X					X
	Stem cells, Development & Regenerative Medicine		X	X	X	X	X				X	X	X	X	X			X		X	X	
	Research Project 1	X	X	X	X		X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
	Research Project 2	X	X	X	X		X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
	Advanced Scientific Skills		X	X	X		X				X	X	X	X	X	X	X		X	X	X	

Module Code	Module Title	Assessment 1	Assessment 2	Assessment 3	Assessment 4
MEDI6049	Research Skills for Biomedical Science	Data Manipulaton & Statistical Analysis 50%	Research Proposal 50%		
	Stem cells, Development & Regenerative Medicine	Oral Presentation 30%	Written Review of Research Article 35%	Written Review of Research Article 35%	
	Research Project 1	Oral Presentation 20%	Research Project Report 70%	*Viva voce* 0%	Lab proficiency 10%
	Research Project 2	Poster Presentation 15%	Research Project Report 50%	*Viva voce* 25%	Lab proficiency 10%
	Advanced Scientific Skills	Analysis of large datasets 40%	Oral Presentation 40%	Written Scientific Abstract 10%	Written Lay Abstract 10%

MRes in Stem Cells, Development & Regenerative Medicine

PART I

Core modules:

Research Skills for Biomedical Sciences
Stem Cells, Development & Regenerative
Medicine
Research Project 1
Research Project 2
Advanced Scientific Skills

PASS

Conferment of award/Graduation

Intermediate Exit Awards

Postgraduate Diploma in Stem Cells,
Development & Regenerative Medicine

Postgraduate Diploma in Research
Methods

Postgraduate Certificate in the Theory
of Stem Cells, Development &
Regenerative Medicine

Postgraduate Certificate in Research
Methods

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
Stationery		You will be expected to provide your own day-to-day stationery items, e.g. pens, pencils, notebooks, etc) Any specialist stationery items will be specified under the Additional Costs tab of the relevant module profile.
Textbooks		*Suggested generic statement:* 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	Laboratory Equipment and Materials:	Students will be required to pay a bench fee of £5100.
IT	Memory stick	You will be expected to provide a memory stick
	Software Licenses	No costs will be incurred when using University computer facilities.
	Hardware	Across all campuses and most halls of residence approximately 1700 computer workstations are available. Currently all students are provided with a desktop or laptop computer to support their studies.
Clothing	Lab Coats	These will be provided
	Protective Clothing	These will be provided
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. The University printing costs are currently: A4 – 5p per side (black and white) or 25p per side (colour)

Main Item	Sub-section	PROGRAMME SPECIFIC COSTS
		A3 – 10p per side (black and white) or 50p per side (colour). Details about printing costs for academic posters can be found here.
Fieldwork: logistical costs	Accommodation:	Depending on the nature of the research project, students may complete fieldwork/data collection at locations other than Southampton. You would not normally be expected to pay for the costs of any accommodation associated with the fieldwork/data collection. You would be expected to pay for incidental expenses eg. meals.
	Insurance	Depending on the nature of the research project, students may complete fieldwork/data collection at locations other than Southampton. You would not normally be expected to pay for the costs of any insurance. Students should check their own vehicle insurance to ensure they are appropriately covered for undertaking fieldwork/data collection.
	Travel costs	Depending on the nature of the research project, students may complete fieldwork/data collection at locations other than Southampton. You would not normally be expected to pay for the costs of any travel associated with the fieldwork/data collection.
	Inter-campus travel costs	You will be expected to cover the cost of occasional travel between the Southampton General Hospital and Highfield campus. The Unilink operates a regular bus service between the two sites.
	Immunisation/vaccination costs	Depending on the nature of the research project, students may complete fieldwork/data collection at locations other than Southampton. You would normally be expected to pay for any immunisation/vaccination costs associated with overseas travel if you are located outside of the UK.
Conference expenses	Accommodation	Students may have the opportunity to attend an academic conference during their studies. You may be expected to pay for the costs of any accommodation and incidental expenses directly associated with the conference.
	Travel	Students may have the opportunity to attend an academic conference during their studies. You may be expected to pay for the costs of any travel directly associated with the conference.