

## Programme Specification

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### MRes Evolution: From the Galapagos to the 21<sup>st</sup> Century 2019-20

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	Biological Sciences/FNES
Accreditation details	None
Final award	Master of Research [with exit point of Postgraduate Diploma] Postgraduate Certificate
Name of award	MRes Evolution: From the Galapagos to the 21 <sup>st</sup> Century
UCAS code	n/a
QAA Subject Benchmark or other external reference	Bioscience QAA: Master's degree characteristics (2010) QAA Framework for Higher Education Qualifications (FHEQ) of UK Degree Awarding Bodies
Programme Leader	Dr Neil J. Gostling
Date specification was written	June 2017
Date specification was validated	November 2017
Date specification was last updated	

### Programme Overview

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The Master of Research in Evolution: From the Galapagos to the 21st Century is a programme that has been designed to allow students, from a range of backgrounds, to explore evolution in a vibrant interdisciplinary setting.

The programme links foundational topics in evolutionary biology with new methods, current global challenges and cutting-edge research topics including:

- Evolutionary Medicine incl:  
-Epigenetics/cancer/disease
- Sustainable Environment
- EvoDevo
- Bioengineering
- Computational Evolution
- Socioeconomic Systems
- Philosophy of Science

Distinctive features of this programme include:

- A field course to the Galapagos, run by Ken Collins and Neil Gostling (the only one of its kind to be offered by a University in the world), gives students the opportunity to consider evolutionary biology, experimentally and theoretically, in the place that helped Darwin formulate his ideas about Natural Selection.
- World-leading research groups in
  - o DoHAD, epigenetics of health and disease (Hanson, Lillycrop)
  - o Extensions to Darwinian evolutionary theory (Watson)
  - o Evolutionary theory and modelling (Doncaster, Hoyle, Ezard, Watson)
  - o Evo-eco ,Evo-devo, Palaeobiology (Chapman, Dearing, Edwards, Ezard, Gostling, Marshall)

allowing students access to project work and the most current thinking in evolutionary biology.

The programme allows students to address current research questions and high-impact challenges such as:

- Predicting responses to climate change (crop security, forestry, ecosystem services)
- Predicting disease outbreaks in interconnected populations
- safe operating spaces for social-ecological systems
- To what extent does the modern synthesis explain the diversity and complexity of life?
- How does environment influence health and disease (over multiple generations)?
- How does epigenetics affect the mechanistic basis of evolution by natural selection?

It is a minimum of one and maximum of five year programme (one year full-time and up to five years if studied on a part-time basis) comprising mainly of research, but also containing taught modules from Biological Sciences, Ocean and Earth Science and other Academic Units across the University of Southampton. The MRes Evolution: From the Galapagos to the 21st Century is designed for graduates of biology, geology, environmental science, archaeology, computer science, mathematics, engineering and other relevant numerate disciplines, and offers students the chance to build on the background of their undergraduate degree, while allowing advanced specialisation in Evolutionary Theory in an interdisciplinary learning environment, in contemporary topics in evolution, following a designated pathway.

Taught and led by staff from Biological Sciences (BS), Archaeology, (ARCH), Electronics and Computer Science (ECS), Engineering (ENG), Mathematics (MAT) and Ocean and Earth Science (OES), the MRes is the 'teaching core' of a multidisciplinary venture, led by the Faculty of Natural and Environmental Science, uniting evolutionary thinking and research across the University. Cutting edge research carried out by academic staff provides direct and enthusiastic input into this challenging and stimulating teaching programme. There are unique opportunities for students to undertake research projects with BS, OES, ECS scientists, archaeologists, mathematicians and engineers, with the potential to be involved with researchers in many other areas, exploring the current evolutionary synthesis.

The programme comprises of two parts: a taught component and an extensive research experience. The larger research component consists of a novel, independent (supported) research project that will be carried out in the state-of-the-art research facilities of the University. The smaller taught component is composed of four modules that will broaden skills in appropriate areas related to the research project. The exact portfolio of courses is selected with the advice of the academic supervisor of the research project. A list of supervisors, their discipline, and areas that students might like to research will be available at the time of application, and through discussion with them, students will be able to have formed ideas about the pathway you wish to explore by the time you arrive in Southampton. This program will provide an education and training suitable for a wide variety of careers and also will prepare students for undertaking a Ph.D.

Biological Sciences, FNES and The University of Southampton are strongly committed to providing the very best learning experience to all our students in a friendly and stimulating environment. We are known nationally and internationally for our excellence in teaching, and are continually improving the scope and delivery of our activities. For example, postgraduate training in marine geology and geophysics at NOCS

has received specific international recognition through our EU Marie Curie Training Site in Seafloor and Sub-seafloor Acoustic Imaging.

For students studying the MRes Evolution: From the Galapagos to the 21st Century, the spectrum of programmes within FNES, Electronics and Computer Science, and beyond in Southampton, are all scientifically exciting and challenging, as well as highly relevant to the modern world. Within this particular programme of study we aim to develop and enhance your knowledge of evolutionary theory, and enable you to apply it across the discipline of your choice, from palaeobiology to modelling; engineering to (even) business strategy; medicine to global change.

By the end of your MRes programme you will have extended your original subject-specific and more generic skills beyond the level of your undergraduate degree to incorporate evolutionary thinking in your 'non biology' discipline, or to apply evolutionary biology in a different way. This will be partially the result of further instruction during the programme, but also will be a direct result of the application and practice of your skills during your research project and the practical elements of your studies. Additionally you will have developed research skills of sufficient depth to produce work that is publishable in refereed scientific literature.

The specific aims of our MRes programmes are to provide you with:

- In-depth training (in for example evolution and engineering/maths/computer science) through advanced coursework and an 8-10 month individual research project, which may be multi-disciplinary within evolutionary biology.
- A rigorous and suitable qualification that would enable you to proceed to a more specialist higher degree at the PhD level.
- Training in practical research methods and application of advanced techniques through both fieldwork, including specimen collection and consolidation and laboratory work, including preparation.
- A high-quality and intellectually stimulating experience of learning in a supportive environment.

***In addition to the above, students enrolled on the MRes Evolution: From the Galapagos to the 21<sup>st</sup> Century will gain:***

- An extensive and in-depth knowledge of Evolutionary Theory and its relationship to the disciplines aligned to this programme within biology, ocean and earth science and beyond through a taught module in the wider topics in evolutionary biology.
- A sound theoretical knowledge and understanding of the relationships and evolution of the major lineages of living organisms.
- Vocational training for a professional career in industries, including Museums, that have interests in evolution along the UK South Coast (inc. Jurassic Coast World Heritage Site and the Dinosaur Isle Museum, Isle-of-Wight);
- Critical appraisal and analytical skills in evolutionary theory and the ability to communicate results to non-specialists;
- Business awareness, communication and presentation skills, developed through group fieldwork, seminar presentations and production of a literature review and project dissertation;
- An opportunity for original and independent research in evolutionary theory in biological, earth, ocean and computer sciences, engineering, business, mathematics, etc.
- An opportunity to develop your skills in scientific computing and critical analysis of scientific literature.

A Master of Research programme differs from a conventional MSc programme in the balance between teaching and research. As an MRes student you will spend more time on the research project and correspondingly less time will be devoted to formal teaching.

You will start your MRes programme having already acquired important skills and knowledge during your undergraduate career that you can then apply to new questions. This programme will provide you with an opportunity to focus and further develop your undergraduate experience in the context of

evolutionary biology. In particular you will develop specific knowledge and skills in areas determined by the combination of modules you take and the nature of the substantial research project you will undertake.

## **Programme Learning Outcomes**

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### **Knowledge and Understanding**

Having successfully completed this programme you will be able to demonstrate:

- A1. The value and need for multi-disciplinary approaches in advancing knowledge from a wide selection of topics currently at the frontiers of research and many of the specialist techniques used to investigate them.
- A2. The use of a range of independent research methods.
- A3. Knowledge and understanding of the scientific and technological principles underlying the chosen research specialisation in evolution;
- A4. An understanding of how to design and test scientific hypotheses and an ability to address and develop strategies to resolve a research problem in the chosen specialist area;
- A5. Skills in critical evaluation of primary and review scientific literature and the ability to develop this knowledge into an ability to collect, record and critically evaluate laboratory data

### ***Teaching and Learning Methods***

To assist the development of your knowledge and understanding of evolutionary theory we use a wide range of teaching methods in this MRes. You will develop core knowledge and understanding via compulsory modules and specialised option module lectures, tutor-led and student-led tutorials, student-led seminars and presentations, laboratory and practical classes, case studies, fieldwork, guided independent study, group study and your own research project. A wide range of support is available for those students who have further or specific learning and teaching needs.

Teaching and Learning methods will include:

- Independent (supported) project work on a research problem that could lead to results publishable in the peer reviewed literature;
- Regular meetings about research work with the supervisory team, with the lead academic as the key provider of guidance;
- Staff-led lectures, tutorials, seminars and demonstrations;
- Directed reading of the primary scientific literature;
- Student-led seminars and presentations (verbal and poster) and contributions to regular research group meetings;
- Carrying out written assignments and other activities associated with the coursework component of the modular component of study.

For the research-based component you will carry out an extensive research project on a topic related to the specialised area. You will plan the project with the support of your academic research supervisor. Initially you will carry out a preliminary review of the literature in the area of research to help you plan the overall objectives and build on the current level of knowledge in the area of research. This will give you the opportunity of producing results that would be of a standard to publish in peer reviewed journals. You will present an overview containing these elements at an early stage to your project supervisor and then have regular contact throughout the remainder of the project. This will include providing a regular

summary of research finding to the supervisor. A detailed plan of the final dissertation will be presented to the supervisor three quarters of the way through the project and feedback provided by the supervisor in how to structure the final dissertation.

### **Assessment methods**

#### **Taught component**

The taught component will be assessed by a mixture of coursework (e.g. essays, poster presentations, oral presentations) and examination. Some modules are not exam based. All skills centred learning is taken at FHEQ Level 7 (which maps to BIOL6XXX (and equivalent) modules). The exams and coursework are designed to ensure that the learning outcomes have been achieved. The proportion of coursework and exam is that which is judged to most suit student engagement with the content of the course as well as judging the level of understanding.

Past examination papers are available through the library website [www.library.soton.ac.uk/sash/exam](http://www.library.soton.ac.uk/sash/exam) under 'Revision Techniques' and also on the Staff Student Liaison Blackboard site under the appropriate heading.

#### **Research component**

The research component will be assessed on the basis of the practical outcomes of the project work, ability to communicate these and also the understanding of background literature, all of which is judged through the production of a scientific dissertation. This will be assessed independently by an internal academic examiner within the University of Southampton in addition to the supervisor.

## **Subject Specific Intellectual and Research Skills**

Having successfully completed this programme you will be able to:

- B1. Recognise and use subject specific theories, paradigms, concepts and principles in the context of research;
- B2. Critically analyse, synthesise, interpret and summarise complex scientific information.
- B3. Demonstrate familiarity with the techniques of collecting, recording and analysing data in the field, using both standard biological and state-of-the-art techniques and equipment;
- B4. Read, use and reference the work of others in an appropriate manner;
- B5. Undertake field/laboratory investigations in a responsible and safe manner, paying due attention to risk assessment, rights of access, relevant health and safety regulations, and sensitivity to the impact of investigations on the environment and stakeholders.

## **Transferable and Generic Skills**

Having successfully completed one of these programmes you will have developed a range of graduate key skills. You should be able to:

- C1. Synthesise, apply and develop further the computing, statistical and mathematical skills that you brought to the MRes programme from your undergraduate programme.
- C2. Appreciate statistical issues of sample selection, accuracy, precision and uncertainty during collection, recording and analysis of data in the field.
- C3. Prepare, process and present scientific data, using appropriate qualitative and quantitative techniques and computer software packages and solve numerical problems using computer and non-computer-based techniques.
- C4. Collect and integrate several lines of evidence to formulate and test hypotheses.
- C5. Apply your knowledge and understanding to address familiar and unfamiliar problems.
- C6. Design, implement and report on scientific research projects, including a major research project at the forefront of evolutionary knowledge.
- C7. Critically use the Internet as a means of communication and data dissemination, and as a source of information.

- C8. Understand the roles of individuals in teams and how individuals learn in team groups. Evaluate performance as an individual and as a team member.
- C9. Continue to develop the skills necessary for self-managed and life-long learning (such as working independently and within groups, time management and organisation).
- C10. Develop an adaptable and flexible approach to study and work to achieve targets for personal, academic and career development.

### **Teaching and Learning Methods**

Teaching and Learning methods will include:

- Staff-led lectures, tutorials, seminars and demonstrations;
- Directed reading of the primary scientific literature;
- Student-led seminars and presentations (verbal and poster) and attendance at regular research group meetings;
- Independent (supported) project work in the research environment on a research problem that could realistically lead to results publishable in the peer reviewed literature;
- Regular meetings about research work with the supervisory team, with the lead academic as the key provider of guidance;
- Engagement with written assignments and other activities associated with the coursework component of the taught modules;
- Regular meetings about research work with the supervisory team, with the lead academic as the key provider of guidance.

### **Assessment methods**

The taught component will be assessed by a combination of coursework and examinations at the end of each semester.

The research component will be assessed on the practical outcomes of the project work and the ability to communicate these and background understanding in a scientific dissertation. See above for more detail on these. Additional support can be provided for those students who have further or specific needs.

### **Mapping outcomes to modules:**

<b>Learning Outcome</b>	<b>Research Project</b>	<b>Topics Module</b>	<b>Galapagos Field Course</b>	<b>Option 1</b>	<b>Option 2 (research topic specific module)</b>
Knowledge and Understanding					
A1		X		X	
A2		X			
A3	X	X		X	
A4	X				X
A5	X		X		X
A6	X				
A7	X				
Subject Specific Intellectual and Research Skills					
B1	X			X	X
B2				X	X
B3	X		X		
B4	X	X	X	X	X
B5	X		X		
Transferable and Generic Skills					
C1	X				
C2	X				
C3	X	X			

C4	X				
C5	X	X	X	X	X
C6	X	X			
C7	X	X	X	X	X
C8	X	X	X	X	X
C9	X	X	X	X	X
C10	X		X	X	X

## Programme Structure

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A Master of Research (MRes) programme differs from a conventional MSc programme in the balance between teaching and research. Training is provided in methods of research and opportunities are available to attend taught modules to support the research project. The research project will be related to the topic selected for the Research Proposal. A dissertation based on this is submitted at the end of the year for the degree of Master of Research.

Graduates will find the extra support offered by the MRes programme an excellent way to prepare for a subsequent three-year research project. Students should note that the research undertaken for the MRes Project would be independent of research for a PhD.

The programme involves teaching activities occupying about one third of the programme and a research project occupying the remaining two thirds of the programme.

The duration of the full-time programme is one year. Students undertake the taught component between August/September and May. The research component is undertaken throughout the whole year and normally completed with the submission of your dissertation by the end of July.

The duration of the part-time programme is between 2-5 years. Students normally undertake the taught component over 2 years. Semester 2 modules should normally be taken after Semester 1 modules. The research component is undertaken throughout the duration of your part-time registration. You will have up and until the July of your fifth year in which to complete your research and submit your dissertation.

Each taught module on this programme is normally worth between 7.5 and 15 credits, which equates to 75 – 150 hours of study. For example a 15 credit point module would normally comprise up to 30 hours contact teaching (lectures, practicals, etc.) with the remainder of the time for your own independent study.

You will also be encouraged to attend research seminars, which at Highfield Campus, Avenue Campus and the NOCS are run at a variety of different levels from research group to academic unit. In particular, you will be encouraged to attend key seminars from leading visiting scientists.

Details of the teaching structure and modules for the programme can be found in Appendix 1.

## Progression

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The University regulations governing progression, determination and classification of results in general can be found in the University Calendar (Section IV – General Regulations)

<http://www.calendar.soton.ac.uk/sectionIV/progression-regs.html>. Those specific to the Faculty, the Academic Unit and your programme are in Section IX – Faculty of Natural and Environmental Sciences <http://www.calendar.soton.ac.uk/sectionIX/sectIX-index.html> further details about progression and assessment rules for Master of Research are provided in the Student Handbook and Assessment Handbook.

## Support for student learning

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There are systems for the support of student learning available from central University facilities.

In the Academic Unit/Faculty you will be able to access:

- Programme and module guides/information. Hard copies are available but are mainly published on the web: [www.southampton.ac.uk/biosci](http://www.southampton.ac.uk/biosci) and [www.blackboard.soton.ac.uk](http://www.blackboard.soton.ac.uk)
- A number of well-resourced lecture/meeting rooms and a suite of modern, first class, specialist laboratories and analysis facilities.
- Computer clusters which are available at Highfield and NOCS for your use shared with undergraduate students. Additional computer clusters are available for your use on the other University campuses.
- Equipment to support your fieldwork, including laptop computers, preparation and a research-led environment, which provides a high-quality learning environment for students.
- A dedicated Faculty Office whose role is to support both staff and students in the administration of postgraduate teaching and research within the School. This is normally your first port of call for issues relating to the administration of your programme (e.g. registration, timetables, module courses, coursework submission, sickness and absence, examinations, staff whereabouts, etc.)
- A personal supervisor system which aims to provide personalised pastoral and academic care for all students. You will be allocated a member of the academic staff as your personal supervisor on arrival at University, and he/she will be charged with your guidance throughout your postgraduate career.
- Access via email which is freely available at all times and personal contact with all teaching staff.

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 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;
- 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

- 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 support within Southampton Biological Sciences. You will:

- Receive a dedicated computer for use during the MRes programme;
- receive an induction that will introduce you to all our teaching and learning resources you will interface with during your degree as well as ensuring you understand the regulations which govern your study;
- have a personal research supervisor who will advise on choice of taught modules and can provide pastoral support (this is the primary source of support for your research);
- have an allocated academic advisor who can provide an alternative and independent view on your progress. This member of staff will also be your internal examiner at the end of the research programme;
- receive individually tailored guidance from academic staff delivering the taught components of your programme. Each module has an academic coordinator who would be the first point of contact in the event of needing academic support;
- be able to obtain additional support from the senior staff involved in the MRes Advanced Biological Sciences Programme; have a base in a research laboratory proximate to the other team members of your research group – an invaluable source of peer to peer support;
- have a personal e-mail account, web access, and IT support from the University i-Solutions team;
- have access to writing space for writing up your MRes research project;
- attend group meetings in the selected research grouping and research seminars given by visiting speakers;

There are systems for the support of student learning in Biological Sciences as well as available from central University facilities. Throughout the degree, students with special learning requirements are supported and their ability to complete the degree in full is managed by making appropriate reasonable adjustments to our infrastructure and methods of delivery and assessment.

## Methods for evaluating the quality of teaching and learning

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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 (relevant to the taught part of the MRes);
- Acting as a student representative on various committees serving as a student representative on the CfBS Graduate School Committee
- 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 Director of the Masters programme ensures that teaching related issues are diverted to the Staff Student Liaison Committee and that research related issues are directed to the Graduate School;
- 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

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The University's Admissions Policy (see [www.southampton.ac.uk/admissions-policy](http://www.southampton.ac.uk/admissions-policy)) applies equally to all programmes of study. The following are the typical entry criteria we use for selecting candidates for admission to our programmes.

### Entry Requirements

The University's general admission requirements, including information for overseas/European applicants can be viewed on the web page: [www.calendar.soton.ac.uk/sectionIV/admissions.html](http://www.calendar.soton.ac.uk/sectionIV/admissions.html)

The Centre for Biological Sciences' admissions requirements can be viewed at: [www.southampton.ac.uk/biosci](http://www.southampton.ac.uk/biosci)

The normal entry requirement is at least an upper second class honours degree in a relevant subject. Non-UK applicants will usually have completed 4 years or more in higher education. Students who are of lower second honours degree standard will only be admitted in exceptional circumstances.

A key feature of your first degree studies is that they must demonstrate achievement of learning outcomes (both content and level) that will ensure that you can integrate into our teaching and research experience.

Your application to Biological Sciences will include your specification of the area of research you wish to work in. It is assumed that this expression of interest implies that you have an academic and experience background that is suitable for Masters level research in this area. Our admissions process will seek to confirm that this is the case prior to offering you a place.

The selection process will involve close scrutiny of your academic credentials in a process that will include both the academic researcher you identified as being of interest to you and the Post Graduate Admissions Tutor. Typically the process will involve an interview (via Skype for students not available to come to Southampton). The whole process is supported by a Post Graduate Admissions Administrator who remains in touch with students throughout the application process.

A minimum standard of English Language is required for admission to the programme which is identified as a standard against a number of internationally recognised language tests. A list of these may be found at [http://www.southampton.ac.uk/international/entry\\_reqs/english\\_language.shtml](http://www.southampton.ac.uk/international/entry_reqs/english_language.shtml)

The decision of whether to offer a place is one made by the academic supervisor, their research manager and the Post Graduate Admissions Tutor. The latter will make the formal offer of a place to you if this is the appropriate course of action.

Students are expected to prepare themselves for the course by private study prior to the start of the course. A reading list will be made available through contact with the nominated research supervisor

### International Students and ATAS

International applicants to some undergraduate programmes are required to apply to the Foreign and Commonwealth Office's (FCO) Academic Technology Approval Scheme (ATAS) for clearance to study this programme in the UK before an application for a Tier 4 visa can be made

An ATAS certificate, once issued, is valid for the purpose of making a visa application for a period of six months from the date of issue. You need only hold a conditional offer when making an application for ATAS. You must ensure that you have received ATAS clearance before making your application for a Tier 4 student visa or your visa application will be refused. The FCO normally takes between four and six weeks to issue ATAS clearance, although it can sometimes take longer.

More information regarding ATAS and the process can be found at:

<http://www.southampton.ac.uk/studentadmin/admissions/atas/>

## Career Opportunities

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A range of career opportunities are open to you having completed your MRES:

- Biotechnology, pharmaceutical, agricultural industry- depending on specialisation
- Postgraduate research training
- Scientific officer in research laboratories
- Teaching
- Forensic science
- Business management

The University has a Careers and Employability Service that offers a range of support.

## External Examiners(s) for the programme

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**Name:** TBC (overarching External Examiner for the whole programme)

**Institution:**

Students must not contact External Examiner(s) directly, and external examiners have been advised to refer any such communications back to the University. Students should raise any general queries about the assessment and examination process for the programme with their Course Representative, for consideration through Staff: Student Liaison Committee in the first instance, and Student representatives on Staff: Student Liaison

Committees will have the opportunity to consider external examiners' reports as part of the University's quality assurance process.

External examiners do not have a direct role in determining results for individual students, and students wishing to discuss their own performance in assessment should contact their personal tutor in the first instance.

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**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 [www.sussed.soton.ac.uk](http://www.sussed.soton.ac.uk)

# Appendix 1

## Programme Structure

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Details of the modules listed (i.e. module specifications) can be downloaded from the university website ([www.southampton.ac.uk/biosci/](http://www.southampton.ac.uk/biosci/))

### MRes Evolution: From the Galapagos to the 21<sup>st</sup> Century

*Taught Component: 60 Credit Points at Level M*

All students must take two compulsory modules: an introductory field module in the Galapagos that will provide a background to the major lines of evidence that Darwin used to develop the Theory of Evolution by Natural Selection in the context in which he found himself (15 credit points) and a module that covers key literature on a variety of “key contemporary topics” in evolution, systematics, general palaeontology and evolutionary biology (15 credit points); You will follow a specific pathway BS/ECS/OES/Maths/Engineering/Other dictated by your choice of research project. The tables below indicate which modules could be taken for each pathway.

<i>Pre-semester 1: Compulsory</i>		<i>Credit points</i>	<i>Pathway</i>
<b>SOES6052</b> Galapagos field course		15	All
<i>Semester 1: Compulsory</i>		<i>Credit points</i>	
	BIOL6087 Topics in Evolution, from the Galapagos to the 21 <sup>st</sup> Century	15	All
<input type="checkbox"/>	<b>CHOOSE TWO MODULES FROM THE FOLLOWING LIST:</b>	<i>Credit points</i>	
	ARCHEcology of Human Evolution; biological, social and cultural approaches to hominin adaptation	15	Archaeology
	ARCH6121Contexts for Human Origins Research	15	Archaeology
	BIOL6Evolution and Development	15	Any
	BIOL6028 Global Change Biology	15	Biology
	BIOL6033 Molecular Basis of Disease	15	Biology/Med
	BIOL6055 1/2 Module on bioinformatics	7.5	Biology/CompSci
	BIOL6074 Bioinformatics and Systems Biology	15	Biology/CompSci
	BIOL6089 Independent Investigation Project	15	Any

	COMP6202 Evolution of Complexity (computational methods inspired by evolution)	15	CompSci
	Geog3047 Complex Socio-ecological Systems: Past, Present and Future	15	Geog
	Geog3068 Biogeography	15	Geog
	MATH6140 Structure and Dynamic Networks	15	Maths
	MATH6149 Modelling with Differential Equations	15	Maths
	PHIL6048 Individually Negotiated Topic 1	15	Philosophy
	SESM3033 Orthopaedic Biomechanics	15	Engineering
	SESM6038 Computation Methods in Biomedical Engineering Design	15	Engineering
	SOES6022 Microfossils, Environments & Time	15	Biology/Palaeo
	L7 Modules offered by BS, OES, ECS, Maths, Engineering, Business, Medicine TBA	7.5 - 15	Any
<b>Semesters 1 &amp; 2:</b>		<b>Credit points</b>	
<input type="checkbox"/>	BIOL6088MRes Extended Evolutionary Biology Research Project	120	Pathway Specific

### **Research Component: 120 Credit Points at Level M**

You will be registered for the MRes Research Project module (120 credits). In addition to enabling you to complete a substantial piece of independent research, this module will provide you with training in research methodology including assessment of some elements. The module includes training in scientific computing, team building exercises, science communication workshops, communication skills, safety training and a professional skills workshop.

You will also draft a detailed Research Proposal to prepare for your proposed research project, in conjunction with the various academics involved in your project, and academic unit most closely allied to your research interests. The Research Proposal is expected to evaluate any published literature about your chosen topic, set out the project aims and give an estimate of the resources required.

It is anticipated that the quality of the research and its novelty will lead to results that are suitable for publication in the peer-reviewed scientific journals.