

Programme Specification

MRes in Vertebrate Palaeontology [full-time and part-time]

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	Ocean and Earth Science
Accreditation details	None
Final award	Master of Research
Name of award	Master of Research in Vertebrate Palaeontology
Interim Exit awards	Postgraduate Certificate
FHEQ level of final award	7
UCAS code	N/A
QAA Subject Benchmark or other external reference	QAA Earth Sciences, Environmental Sciences and Environmental Studies Benchmark Statement (ES3) QAA Masters Degree Characteristics
Programme Coordinator	Dr Gareth Dyke
Date specification was written	January 2012

Programme Overview

Brief outline of the programme

The Master of Research is a minimum of one and maximum of five year programme comprising mainly of research, but also containing taught modules exclusively delivered at the National Oceanography Centre, Southampton (NOCS).

The MRes in Vertebrate Palaeontology is designed for graduates of biology, geology, environmental science and other relevant numerate disciplines, and offers you the chance to build on the background of your undergraduate degree, while allowing advanced specialisation in vertebrate palaeontology.

Learning and teaching

To assist the development of your knowledge and understanding of vertebrate palaeontology 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.

Assessment

To test your knowledge and understanding of material presented in the lectures and associated practicals, you will be assessed via a combination of written examinations, oral presentations, essays, poster presentations, and fieldwork reports. In addition, during Semester 1, you will complete a research proposal based on the topic selected for your individual research project, which will be assessed by the project tutor. Material in Semester 2 will be assessed only by coursework (essays, literature reviews, practical reports). You will also present seminars during Semester 2 and these will be assessed by tutors. All students carry out a major individual research

project, culminating in a dissertation that is assessed by both internal and external examiners. Additional support can be provided for those students who have further or specific needs.

Summative assessment contributes to your marks and usually involves a combination of unseen written examinations (at the end of the study module) and coursework (which includes essays, project reports, and computing practicals, etc.). Assessment of your knowledge and understanding is undertaken primarily via these summative assessment methods; in addition you will receive feedback on all formally assessed work.

Educational Aims of the Programme

The Master of Research is a minimum of one and maximum of five year programme comprising mainly of research, but also containing taught modules exclusively delivered at the National Oceanography Centre, Southampton (NOCS).

The MRes in Vertebrate Palaeontology is designed for graduates of biology, geology, environmental science and other relevant numerate disciplines, and offers you the chance to build on the background of your undergraduate degree, while allowing advanced specialisation in vertebrate palaeontology.

Ocean and Earth Science (OES) is housed in the prestigious National Oceanography Centre, Southampton (NOCS). A joint venture between the University of Southampton and the Natural Environment Research Council (NERC), the Centre is one of the world's largest institutions devoted to research, teaching and technology development in ocean and Earth science.

The programme is taught by staff from OES and Biological Sciences. Cutting edge research carried out by academic staff provides direct and enthusiastic input into a challenging and stimulating teaching programme. There are unique opportunities for you to undertake research projects with OES and Biological Sciences scientists.

Ocean and Earth Science is 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 in Vertebrate Palaeontology, the spectrum of programmes within Ocean and Earth Sciences and through our collaborations with Biological Sciences and Aeronautics and Astronautics 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 and enthusiasm for vertebrate evolutionary biology, anatomy, phylogenetics and biomechanics.

By the end of your MRes programme you will have extended your subject-specific and more generic skills beyond the level of your undergraduate degree. 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 which is publishable in refereed scientific literature.

The aims of the programme are to provide:

- In-depth training through advanced coursework and a 10 month individual research project, which may be multi-disciplinary within vertebrate biology or directed towards a specific disciplinary branch of vertebrate palaeontology;
- A sound and suitable qualification that would enable you to proceed to a more specialist higher degree at the PhD level.
- A training in practical research methods and application of advanced techniques through both palaeontological fieldwork, including specimen collection and consolidation and laboratory work, including preparation.

- A high-quality and intellectually stimulating experience of learning in a supportive environment.

Programme Learning Outcomes

Knowledge and Understanding

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

1. The value and need for multi-disciplinary approaches in advancing knowledge.
2. A wide selection of topics currently at the frontiers of research and many of the specialist techniques used to investigate them.
3. A range of independent research methods.

Teaching and Learning Methods

To assist the development of your knowledge and understanding of vertebrate palaeontology 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.

Assessment methods

To test your knowledge and understanding of material presented in the lectures and associated practicals, you will be assessed via a combination of written examinations, oral presentations, essays, poster presentations, and fieldwork reports. In addition, during Semester 1, you will complete a research proposal based on the topic selected for your individual research project, which will be assessed by the project tutor. Material in Semester 2 will be assessed only by coursework (essays, literature reviews, practical reports). You will also present seminars during Semester 2 and these will be assessed by tutors. All students carry out a major individual research project, culminating in a dissertation that is assessed by both internal and external examiners. Additional support can be provided for those students who have further or specific needs.

Summative assessment contributes to your marks and usually involves a combination of unseen written examinations (at the end of the study module) and coursework (which includes essays, project reports, and computing practicals, etc.). Assessment of your knowledge and understanding is undertaken primarily via these summative assessment methods; in addition you will receive feedback on all formally assessed work

Subject Specific Intellectual and Research Skills

Having successfully completed this programme you will be able to:

1. Recognise and use subject specific theories, paradigms, concepts and principles in the context of research;
2. Critically analyse, synthesise, interpret and summarise complex scientific information.
3. Demonstrate familiarity with the techniques of collecting, recording and analysing data in the field, using both standard palaeobiological and state-of-the-art techniques and equipment;
4. Read, use and reference the work of others in an appropriate manner;

5. Undertake field 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.

Teaching and Learning Methods

Your subject specific, general and transferable skills are embedded within the curriculum and many of the teaching methods used to develop these skills are common to those discussed in the Knowledge and Understanding Section. You will develop your subject-specific, general and transferable skills via compulsory module and specialised option module lectures, tutor-led and student-led tutorials and problem classes and courses in computer programming and particular software packages. You will also attend lectures on writing and oral communications, health and safety aspects of practical work, followed if appropriate by the development of correct procedures in the field. Use of the internet for accessing data, access to module information, data transfer during group practicals, and general communication with staff and students, will also be covered. You will also attend a professional development workshop. A wide range of support is available for those students who have further or specific learning and teaching needs.

Assessment methods

Assessment of these skills will be achieved through a combination of written examinations, essays, computer and laboratory exercises, oral presentations, fieldwork reports, short coursework assignments, poster presentations, and a substantial research project dissertation. Additional support can be provided for those students who have further or specific needs.

Transferable and Generic Skills

Having successfully completed this programme you will be able to:

1. Synthesise, apply and develop further the computing, statistical and mathematical skills that you brought to the MRes programme from your undergraduate programme.
2. Appreciate statistical issues of sample selection, accuracy, precision and uncertainty during collection, recording and analysis of data in the field.
3. Prepare, process and present data, using appropriate qualitative and quantitative techniques and computer software packages and solving numerical problems using computer and non-computer-based techniques.
4. Develop where appropriate, advanced skills in computer programming.
5. Collect and integrate several lines of evidence to formulate and test hypotheses.
6. Apply your knowledge and understanding to address familiar and unfamiliar problems.
7. Design, implement and report on scientific research projects, including a major research project at the forefront of vertebrate palaeobiological knowledge.
8. Critically use the Internet as a means of communication and data dissemination, and as a source of information.
9. Identify individual and collective goals and responsibilities and performing in an appropriate manner.
10. Recognise and respect the views of other team members.
11. Evaluate performance as an individual and as a team member.
12. Understand the roles of individuals in teams and how individuals learn in team groups.
13. Continue to develop the skills necessary for self-managed and life-long learning (such as working independently and within groups, time management and organisation).
14. Identify and work towards targets for personal, academic and career development.
15. Develop an adaptable and flexible approach to study and work

Disciplinary Specific Learning Outcomes

Having successfully completed this programme students enrolled on the MRes in Vertebrate Palaeontology will gain:

- An extensive and in-depth knowledge of vertebrate palaeontology and phylogenetics and their relationships to other disciplines within biology and ocean and earth science;
- A sound theoretical knowledge and understanding of the relationships and anatomy of the major lineages of vertebrate animals.
- Vocational training for a professional career in industries, including Museums, that have interests in vertebrate palaeontology 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 vertebrate palaeontology 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 on vertebrate palaeontological topic.
- 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. Your programme will provide you with an opportunity to focus and further develop your undergraduate experience in the context of vertebrate palaeontology. 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 Structure

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. Semester 1 modules generally run from October to January. Semester 2 modules are taught in a 2-3 week intensive format between February and May.

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

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 August 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 (*ECTS = European Credit Transfer Scheme*). For example a 15 ECTS point module would normally comprise up to 60 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 the NOCS are run at a variety of different levels. 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 Requirements

The programme follows the University's Higher Degree Regulations as set out in the University Calendar:
<http://www.calendar.soton.ac.uk/sectionV/master-research.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>

Intermediate exit points

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

Qualification	Minimum overall credit in ECTS credits	Minimum ECTS credits required at level of award
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.
- 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 Student Services Centre
- Enabling Services offering assessment and support facilities (including specialist IT support) 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:

16. Programme and module guides/information. Hard copies are available but are mainly published on the web: www.southampton.ac.uk/soes/teaching and www.blackboard.soton.ac.uk
17. A number of well-resourced lecture/meeting rooms and a suite of modern, first class, specialist laboratories and analysis facilities.
18. A dedicated 'Masters' room with computer and high speed Internet access.
19. Three additional computer clusters which are available at the NOCS for your use shared with undergraduate students. Additional computer clusters are available for your use on the other University campuses.
20. Equipment to support your field work, including laptop computers, preparation and field fossil collection equipment, camping equipment and GPS.
21. A research-led environment, which provides a high quality learning environment for students.
22. A dedicated School 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.)
23. 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.
24. Access via email which is freely available at all times and personal contact with all teaching staff.

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:

25. Completing student evaluation questionnaires for each module of the programme
26. 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.
27. Serving as a student representative on Faculty Scrutiny Groups for programme validation
28. 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

University Commitment

The University will at all times seek to operate admissions regulations that are fair and are in accordance with the law of the United Kingdom, and the University's Charter, Statutes, Ordinances and Regulations.

This includes specific compliance with legislation relating to discrimination (e.g. Equality Act 2010) and the University's Equal Opportunities Policy Statement. This includes a commitment that the University will:

- actively assist groups that experience disadvantage in education and employment to benefit from belonging to the University
- actively seek to widen participation to enable students that do not traditionally participate in Higher Education to do so;
- ensure that admission procedures select students fairly and appropriately according to their academic ability and that the procedure is monitored and regularly reviewed.

Entry Requirements

To undertake postgraduate study in Ocean and Earth science at Southampton, you will need to be able to demonstrate your interest in your chosen area, as well as a commitment to the type of programme and its duration.

Information on how to apply to study can be found at:

http://www.southampton.ac.uk/oes/postgraduate/taught_courses/apply.page

Postgraduate taught programmes

Please see individual programme details for qualification requirements at:

http://www.southampton.ac.uk/oes/postgraduate/taught_courses.page

Postgraduate research programmes

A first-class or upper second-class BSc degree (or equivalent) is required to enrol on our PhD programme. We are looking for applicants with an aptitude for research, demonstrated by your undergraduate or masters project work, coupled with a sound background in basic science.

Because of the interdisciplinary nature of the subject, we accept students with backgrounds in a wide range of science subjects; often these are augmented by a suitable masters degree in a marine based science.

Further information can be found at:

http://www.southampton.ac.uk/oes/postgraduate/research_degrees.page?

International applications

International applicants should refer to the General Entry Requirements – visit our International Office website at <http://www.southampton.ac.uk/international/> or the NARIC website at <http://ecctis.co.uk/naric/> for further information on qualifications.

International students whose first language is not English are required either:

- to reach a satisfactory standard in an approved test in English or

- to have obtained a first degree from a university based in the UK that has been taught and assessed in English, or to have been instructed and assessed in English and come from a country which appears on the list of those exempt from testing. Some students may also be advised to complete a pre-sessional English language programme or to attend support English language lessons during term time, provided by the University's [Centre for Language Study](#)

For more information on English Language Proficiency requirements, please click on the link below:
<http://www.southampton.ac.uk/studentadmin/admissions/admissionspolicies/language/>

Mature applicants

We are pleased to receive applications from mature candidates with equivalent national and international qualifications. For more information, please click on the 'Entry Requirements' link below:
http://www.southampton.ac.uk/oes/undergraduate/apply/entry_requirements.page?#qualifications

Career Opportunities

Information on careers and employability can be found at:

<http://www.southampton.ac.uk/oes/postgraduate/careers.page?>

External Examiner(s) for the programme

Name: Dr Charles Underwood

Institution: School of Earth Sciences, Birkbeck College, University of London

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: <http://www.southampton.ac.uk/oes/postgraduate/index.page?>

Appendix 1:

2014/15	MRes Vertebrate Palaeontology F-T / 5186 & MRes Vertebrate Palaeontology P-T / 5187	Knowledge and Understanding	Subject Specific Intellectual and Research Skills	Transferable and generic skills
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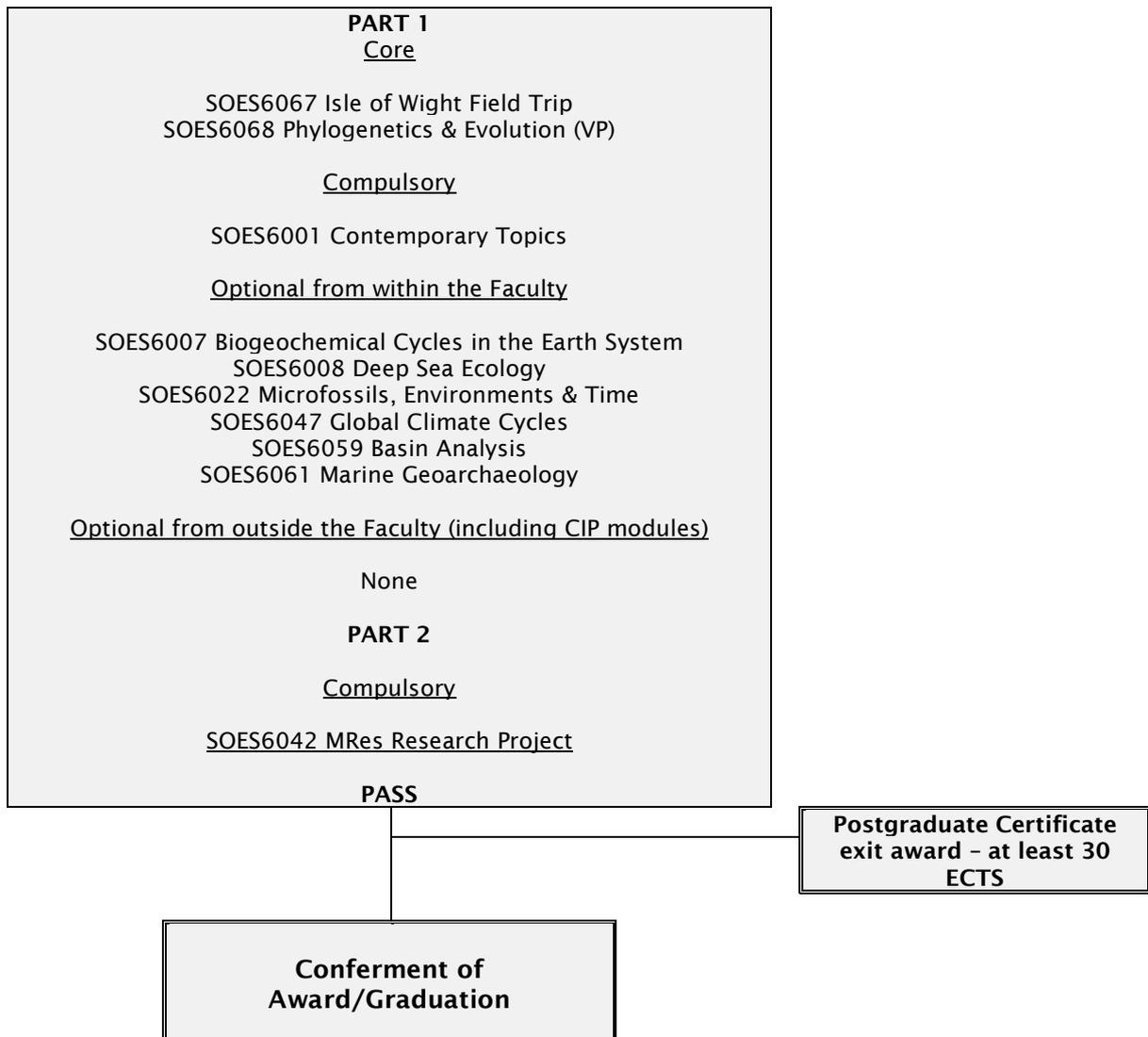
Module Code/	Module Title	1	2	3	1	2	3	4	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15
CODEXXX	Core Module	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x
CODEXXX	Compulsory Module	x	x	x	x	x	x	x															
CODEXXX	Optional Module																						
PART 1 F-T:																							
SOES3015	<i>Palaeoclimate</i>																						
SOES6001	<i>Contemporary Topics</i>		x	x	x	x	x	x															
SOES6007	<i>Biogeochemical Cycles in the Earth System</i>																						
SOES6008	<i>Deep Sea Ecology</i>																						
SOES6022	<i>Microfossils, Environments & Time</i>																						
SOES6047	<i>Global Climate Cycles</i>																						
SOES6059	<i>Basin Analysis</i>																						
SOES6061	<i>Marine Geoarchaeology</i>																						
SOES6067	<i>Isle of Wight Field Trip</i>			x			x	x										x	x	x	x	x	x
SOES6068	<i>Phylogenetics & Evolution (VP)</i>	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x						
BIOL3010	<i>Topics in Ecology and Evolution</i>																						
BIOL6052	<i>Advanced Quantitative Methods</i>																						
PART 2 F-T:																							
SOES6042	<i>MRes Research Project</i>	x	x	x	x	x	x	x															
YEAR 1 P-T:																							

Module Code	Module Title	Coursework 1	Coursework 2	Practical	Project/Other	Exam
SOES6007	Biogeochemical Cycles in the Earth System	Computing Assessment: 20%	Essay: 20%			Exam: 60%
SOES6008	Deep Sea Ecology	Coursework: 40%				Exam: 60%
SOES6022	Microfossils, Environments & Time			Practical: 20%	Project: 30%	Exam: 40%
SOES6042	MRes Research Project				Research proposal: 10% Oral presentation & oral exam: 10% Project: 80%	
SOES6047	Global Climate Cycles	Research Paper: 50%		Practical exam: 50%		
SOES6059	Basin Analysis	Report: 50%			Short Exercises 1-3: 5% each Presentation: 35%	
SOES6061	Marine Geoarchaeology	Marine Geo-Archaeology				Project Report: 70% Group Interview: 20% GIS Map Package: 10%
SOES6066	Contemporary Topics (VP)	Written Reports x 3: 70% in total			Oral presentations x 3: 30% in total	
SOES6067	Vertebrate Palaeobiology: Phylogenetics & Evolution	Fieldwork Self-Assessment: 20%	Written Report: 40%		Job Talk/Fieldwork Presentation: 40%	
SOES6068	Vertebrate Palaeontology of the Isle of Wight Fieldtrip	Summary Reports: 20%			Poster presentation: 10%	Exam: 70%

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. ECTS/CATS structure amended, ensured FHEQ referred to, transferred to new PS document, assessment data table completed, Revision History updated (CQA 11/7/14)

MRes Vertebrate Palaeontology (Full time) Programme Structure



MRes Vertebrate Palaeontology (Part time) Programme Structure

