University of Plymouth

Faculty of Science and Engineering

School of Biological and Marine Sciences

Programme Specification

MRes Marine Biology [2361]

September 2018
1. **MRes Marine Biology**

   **Final award title:** Master of Research in Marine Biology  
   (on completion of 180 credits)

   **Intermediate award title(s):**  
   Post Graduate Certificate on completion of 60 credits

   **UCAS code** N/A  
   **JACS code** C161

2. **Awarding Institution:** University of Plymouth  
   **Teaching institution(s):** University of Plymouth; The Marine Biological Association of the UK

3. **Accrediting Body:**  
   N/A

4. **Distinctive Features of the Programme and the Student Experience**

   - The only MRes course in the UK to be dedicated to Marine Biology.
   - The only Marine Biology Masters course in the UK to be delivered in partnership with a world-renowned, research-specialist institution, The Marine Biological Association of the UK (hereafter ‘the MBA’).
   - Students can draw upon the skills and expertise of researchers in any of the city’s 4 main institutes active in Marine Biological research: the University of Plymouth, the MBA, Plymouth Marine Laboratory(PML) and Sir Alister Hardy Foundation for Ocean Science (SAFHOS).
   - Students can draw on the cumulative knowledge and expertise of one of the largest concentrations of Marine Scientists in Europe.
   - Taught modules are designed to feature dynamic and contemporary content based on the state-of-the-art in Marine Biology (e.g. cutting-edge molecular marine biology tools, marine policy).
   - Students can choose to focus through option module choice, giving them the chance to either further specialist knowledge in an already developed area or...
to round out their skill set, for example by complementing an existing background in ecology and conservation with the option module in molecular and cellular biology.

- Students spend the 2nd phase of the course immersed in a 9 month full-time research project, providing the opportunity to ‘train whilst learning and learn whilst training’ to enhance future prospects.
- Course is designed to be accessible to capable students without a specific background in marine biology and assumes no specialist knowledge of marine science at the outset.
- The course is kept small (circa 20 students) to ensure a high quality student experience.
- Course attracts a diverse cohort of students from both home and abroad.

5. Relevant QAA Subject Benchmark Group(s)

6. Programme Structure

The MRes programme is assessed 90% by coursework and 10% by practical.

First semester: 3 x 20 credit modules
Second semester: 120 credit dissertation.

<table>
<thead>
<tr>
<th>TIMING</th>
<th>MODULES</th>
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<tbody>
<tr>
<td>Semester 1</td>
<td>BIO5131 Research Skills and Methods (15 weeks)</td>
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<td>15 weeks</td>
<td>Core 20 credits</td>
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<td>project work after</td>
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<td>Christmas)</td>
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<tr>
<td>All Year</td>
<td>MBAM5109 Marine Biology MRes Dissertation</td>
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<td>Core 120 credits</td>
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</table>

Preparation for research project & dissertation (3 Weeks)

MRes 180 credits

**Semester 1 (3x20 credit modules):**
1. **BIO5131 Research Skills and Methods** (20 credits, core) is a module shared with other Masters courses in Biosciences and is administered by the School of Biological and Marine Sciences. The aim of this module is to provide a broad understanding of the philosophy, context and practice of scientific enquiry in the Biological Sciences, as well as an appreciation of certain key methods related to the field of interest. Students are trained in generic research skills with an emphasis on the practical development of skills. Advice on career management is also included. The last three weeks of the semester 1 (after Christmas) will be devoted to developing project ideas and producing a 6-page project proposal. Health and Safety related to the project is assessed as part of the project proposal.
2. **MBAM5106 Advanced Research in Marine Biology** (20 credits, core).
The aim of this off-campus MBA-based module is to develop awareness and appreciation of the diverse and multidisciplinary nature of marine biological research and the diverse range of media available for communication and dissemination of science to an equally diverse audience. The module introduces students to the major fields of marine biological research at the MBA and UoP, the approaches and techniques adopted and the staff involved. As such, the content of the lecture component varies from year to year as researchers and current projects change and marine biological research evolves. There is a practical component to the course giving students a chance to experience seagoing, ecological and microbiological work early in the programme schedule. Students are provided with expert guidance on the preparation of scientific research for publication and will be expected to generate outputs that evidence their ability to synthesize ideas across sub-disciplines and to communicate these in a variety of common scientific formats.

3. **MBAM5107 Molecular and Cellular Approaches in Marine Biology** (20 credits, optional). This off-campus MBA-based module develops fundamental theoretical and practical knowledge and skills in cellular and molecular science using marine biological systems as exemplars. The module demonstrates how molecular and cellular techniques can be applied across a diverse range of marine biological fields from health sciences and biotechnology, physiology and biochemistry, evolution, ecology and biogeochemical cycling. It is an intensive introduction to the advanced molecular and cellular principles, concepts and techniques and that are applied by researchers at the MBA and in marine biological research in general. Students will be actively involved with relevant research groups and are taught using a lecture/seminar and practical approach.

OR

**MBAM5108 Marine Ecology and Conservation** (20 credits, optional)
This off-campus MBA-based module elucidates the key threats to the health and persistence of marine ecosystems worldwide and introduces the students to the research base upon which assessments of these threats and putative responses are based. It then deals with methodological approaches to evaluation of threats and their ecosystem consequences, covering both mensurative and manipulative study design. It concludes with a synthesis of contemporary issues and approaches in marine ecosystem conservation from the European perspective and the integration of scientific monitoring and marine conservation methods with policy.
Semester 2 (1 x 120 credit project module):
Building on from planning in Semester 1, MRes students start the 120-credit dissertation after Christmas for submission in mid-September. This effectively involves conducting the independent research project, building on the basic plan formulated in Semester 1, and is likely to comprise: collecting/synthesizing and analysing data, presenting and contextualising results appropriately, demonstrating independent thought in the discussion of results, and presenting the findings both orally and in a high quality dissertation. Conduct of study, including team working, is assessed through a maintained laboratory/fieldwork note book. Students defend the outcomes of the research at a viva voce examination conducted with the Subject External Examiner.

7. Programme Aims

The overall aims of the MRes programme are to provide postgraduates with (1) a comprehensive knowledge and understanding of the scientific basis of Marine Biological Research and (2) the knowledge and skills required to pursue a research or other professional career in Marine Biology.

Specifically, the programme aims to:
A1 Facilitate a broad appreciation of the state of scientific knowledge across marine biology and understanding of frontiers in research in the field.
A2 Provide an advanced knowledge of key contemporary issues and techniques in the chosen specialisation within Marine Biology.
A3 Develop a portfolio of generic and Marine Biology-specific skills required to assimilate and apply knowledge over a wide range of relevant disciplines.
A4 Produce researchers with the knowledge and skills required to effectively plan and conduct complex, high-level scientific studies and rigorously test concepts and hypotheses.
A5 Produce scientists able to interpret complex information to a level that facilitates problem-solving and advances in marine biological knowledge and understanding.
A6 Develop skilled scientists capable of synthesizing, contextualizing and disseminating their work at the highest level.
A7 Train collegiate scientists capable of contributing to a team as well as leading innovative marine biological research within an ethical, diverse, professional environment.
8. Programme Intended Learning Outcomes

8.1. Knowledge and understanding
On successful completion graduates should have developed:

1. A comprehensive knowledge base and understanding of the current state of the theory and practice relating to Marine Biology.
2. An appreciation of the role and value of inter-disciplinary study in the solution of complex Marine Biological problems and in the planning and execution of detailed research programmes.
3. The ability to synthesise and present complex data at a standard which would be acceptable for publication in a refereed journal.
4. A sound framework of advanced skills applicable to independent research.
5. An awareness of the legislative, ethical and moral obligations of researchers in a diverse, egalitarian society.
6. An advanced knowledge of the principal threats to marine biological organisms and ecosystems in the present era.

8.2. Cognitive and intellectual skills
On successful completion, graduates should have developed:

1. Advanced techniques in the management of learning and self-study.
2. The ability to critically assess the existing knowledge-base, then design and execute an advanced marine biological research project, at the postgraduate level.
3. The ability to analyse and contextualise marine biological data to a standard which would be acceptable for publication in a refereed journal.
4. The ability to deliver critical, constructive feedback in review of science in practise and in publication.
5. An awareness of the philosophical basis of the scientific process and the pros and cons of the hypothetico-deductive approach.
6. The ability to debate and craft arguments relating to contemporary marine biological issues.
8.3. **Key and transferable skills**

On successful completion graduates should have developed the ability to:

1. Use guidance and feedback constructively to achieve aims and objectives.
2. Design and execute an advanced marine biological research project, at the postgraduate level.
3. Synthesise and present reasoned scientific argument in a fashion which would be acceptable for dissemination in a variety of formats, for example publication in a refereed journal or presentation at a professional conference.
4. Identify the need for, and acquire, further advanced skills and knowledge relevant to a career in research.
5. Work effectively at an advanced level both independently and if necessary as part of a team.
6. Exploit a range of advanced learning resources and ICT.

8.4. **Employment related skills**

On successful completion, graduates should have developed the ability to:

1. Demonstrate the capacity to plan and execute an advanced research project to completion from the concept stage on a set timescale.
2. Demonstrate rigour and application as well as flexibility and innovation in science.
3. Communicate with potential employers and collaborators in both research and applied scientific contexts.

8.5. **Practical skills**

On successful completion graduates should have developed the ability to:

1. Strategically review a plan of research in order to anticipate and pre-empt problems, or devise solutions to problems arising during the course of the research.
2. Demonstrate the ability to manage time and resources.
3. Generate materials such as posters, presentations and written pieces aimed at communication of both simple and complex concepts, principles and empirical science to a diverse audience from layman to subject specialist.

4. Work safely and undertake appropriate assessments of risks and threats.

9. Admissions Criteria, Including APCL, APEL and DAS Arrangements

This programme aims to recruit biological and environmental science graduates, although applications are considered from well-qualified graduates in other disciplines with relevant experience.

Applications are through the usual system for application to Masters degrees within the UoP; the Programme Leader or nominated deputy will act as admissions tutor and make all decisions. Candidates require an appropriate background in science to honours degree level (2:1 or above) or equivalent and are expected to have achieved at least 2:1 standard or equivalent in any undergraduate research project/dissertation course or module they have taken. Candidates are required to submit transcripts of supporting documents such as a first degree. Non UK qualifications may be crosschecked with universities and by consulting the ENIC – NARIC network. Relevant work experience may be taken into consideration. Candidates are also required to demonstrate their proficiency in English (e.g. GCSE, AS Level, A Level, IB, Cambridge Proficiency Certificate level 4-5, Oxford Higher Certificate, International Certificate Conference (ICC Stage 3 Technical), IELTS scores 6.5.

UoP aims to be fully compliant with the National SENDA requirements for the accommodation of disabled students within its degree programmes. All applications will be assessed on academic criteria as described above. Provision will be made for disabled students by reasonable adjustments where safety and educational standards are not prejudiced. If a student has a particular disability which means that they are disadvantaged by specific assessment tasks, alternatives will be considered such as viva voce examination. The University’s Disability Service will liaise with the course or module leader to identify actions which need to be taken. The Disability Service offers the use of computers, readers, amanuenses and other support mechanisms which may be used where appropriate. Where necessary, alternatives to fieldwork will be provided.
10. Progression Criteria for Final and Intermediate Awards

The MRes in Marine Biology award requires a minimum of 180 credits and is categorised into grades:

**MRes with Distinction:**
This award is achieved by a student gaining an overall average mark on the programme of study of 70% and above, and the mark for the dissertation/major project module is not less than 70%.

**MRes with Merit:**
This award is achieved by a student gaining an overall average mark on the programme of study of between 60% and 69.95%, and the mark for the dissertation/major project module is not less than 60%.

**MRes:**
This award is normally achieved by a student gaining an overall average mark between 50% and 59.95%.

To pass a postgraduate module a student needs to comply with University academic regulations and achieve at least 50% in the overall module mark.

**Exit award titles:**
Post Graduate Certificate on completion (≥50%) of 60 credits.

11. Exceptions to Regulations

None

12. Transitional Arrangements

None required
13. Programme Specification Mapping (PGT): module contribution to the meeting of Award Learning Outcomes

Award Learning Outcomes the module contributes to through its assessed learning outcomes.

<table>
<thead>
<tr>
<th>Module</th>
<th>Credits</th>
<th>C/E</th>
<th>Knowledge &amp; understanding</th>
<th>Cognitive &amp; intellectual skills</th>
<th>Key &amp; transferable skills</th>
<th>Employment related skills</th>
<th>Practical skills</th>
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<th>Assessment element(s) and weightings</th>
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<thead>
<tr>
<th>Module Code</th>
<th>Level</th>
<th>Credits</th>
<th>C – core, E – elective</th>
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<tr>
<td><strong>Award Learning Outcomes</strong> (for more information see Section 8 of the Programme Specification)</td>
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<td>Please map where a module does one or more of the following:</td>
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<td>I – ALO is <strong>introduced</strong></td>
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<td>P – ALO is <strong>practised</strong> (e.g. formative assessment and feedback; basis of tutorial or workshop)</td>
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<td>A – ALO is <strong>assessed</strong></td>
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<tr>
<td><strong>8.1 Knowledge &amp; understanding</strong></td>
<td><strong>8.2 Cognitive &amp; intellectual skills</strong></td>
<td><strong>8.3 Key &amp; transferable skills</strong></td>
<td><strong>8.4 Employment related skills</strong></td>
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