SCHOOL OF NATURAL AND ENVIRONMENTAL SCIENCES

MARINE ZOOLOGY

UNDERGRADUATE DEGREE PROGRAMME HANDBOOK

YEAR 2019 - 2020

STAGE 1 (FIRST YEAR)

Name: ..........................................................
Welcome to the School of Natural and Environmental Sciences and to the BSc Honours degree in Marine Zoology. This is one of several undergraduate degree programmes offered by the School.

This Handbook provides you with an outline of the aims and intended learning outcomes of the Marine Zoology Degree Programme, structure and organisation, methods of its teaching and assessment and all the other information you will need from time to time. The Handbook also provides an introduction to the staff who will teach you. This Handbook is supported by the generic School Undergraduate Handbook which provides other information relevant to you. A copy of the School Handbook will be provided to you during induction week in September.

If you need help or have any queries you should contact your Tutor or call in at the Ridley 2 Building School office (room 4.46 on the 4th floor), where the support staff will always be pleased to assist you or point you in the right direction.

PLEASE KEEP THIS HANDBOOK SAFE
YOU WILL NEED IT THROUGHOUT THE YEAR
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Welcome to the School of Natural and Environmental Sciences, at Newcastle University and to your Marine Science degree programme. I should like to explain a few things about the degree programme and the information in this Handbook. You are undertaking a major commitment in terms of money, effort and time to your degree programme and we want to provide you with a clear description of what you can expect in terms of the learning experience and the support that will be available to assist you in this. This Handbook provides this, and gives all the information you will need to follow a successful, productive, and we hope, happy and rewarding period studying with us. First of all we need to explain your position as what is now called a ‘stakeholder’ in your continuing education and the society in which you live. Stakeholders are those people with a vested interest in an activity and in addition to you; the stakeholders in your education include future employers and sponsors (including the Government and your Local Education Authority).

We have set out as a series of bullet points the main Aims of the degree programme and we give a detailed list of the Intended Learning Outcomes that will help you to meet these overall aims. We have set out the “Intended Learning Outcomes in terms of both subject-specific knowledge and understanding and the key skills you will acquire”. These fall into four broad areas:

a) interpreting, analysing and appraising data and information;

b) field observation, laboratory and computational skills;

c) teamwork, problem solving and the use of Information and Computer Technology;

d) self-analysis, self-presentation, time management and decision making.

Special emphasis will be given to the interpretation of knowledge. In other words, we do not place specific emphasis on the learning of facts but rather on understanding the basis for human knowledge especially in the field of Marine Science. In order to achieve this you will of course need to add to your factual knowledge but you will also learn how to evaluate sources of information and become skilled in the interpretation of experiments and associated data sets. This is often referred to as a ‘cognitive skill’ and it is the development of this ability that is perhaps the most important benefit that you will gain from the degree programme. We are committed to giving you the opportunity to learn much more than a mass of knowledge and we will equip you with the skills necessary for you to have an influence to the good in whatever future walk of life you choose.

GOOD LUCK – Enjoy your course of study in Marine Science
School Staff Contact Details

**Academic Staff**

*Dr Per Berggren: Senior Lecturer*
Ridley Building room 5.90, ext. 85676
e-mail: [per.berggren@ncl.ac.uk](mailto:per.berggren@ncl.ac.uk)
Teaching: Marine mammal biology, ecology and reproduction; conservation and management of marine mammals
Research: Conservation and management of marine mammal populations; development of methodologies to address anthropogenic threats

*Professor Grant Burgess: Professor of Marine Biotechnology; Peer Mentor Coordinator*
Ridley Building room 4.77, ext. 86717
e-mail: [grant.burgess@ncl.ac.uk](mailto:grant.burgess@ncl.ac.uk)
Teaching: Marine microbiology; marine biotechnology
Research: Chemical defence in marine microbes; antifouling compounds of marine microbes and fungi

*Dr Gary Caldwell: Senior Lecturer*
Ridley Building room 5.75, ext. 86660
e-mail: [gary.caldwell@ncl.ac.uk](mailto:gary.caldwell@ncl.ac.uk)
Teaching: Plankton ecology; developmental biology; animal physiology; harmful algal blooms; marine toxins
Research: Ecotoxicology; plankton ecology; organic aquaculture; natural marine toxins, ocean acidification; algal biology

*Professor Tony Clare: Professor of Marine Science*
Ridley Building room 5.80, ext. 85918
e-mail: [tony.clare@ncl.ac.uk](mailto:tony.clare@ncl.ac.uk)
Teaching: Marine organisms and environment; animal behaviour
Research: Chemical signals involved in the settlement of marine invertebrate larvae and the associated fields of bio-fouling; and chemical communication in the marine environment

*Dr Jane Delany: Senior Lecturer; Stage Two Coordinator; Senior Personal Tutor*
Ridley Building room 4.76, ext. 86671 or Dove Marine Laboratory, ext. 83053
e-mail: [jane.delany@ncl.ac.uk](mailto:jane.delany@ncl.ac.uk)
Teaching: Field ecology; rocky shore dynamics; public understanding of science; marine pollution; biological oceanography
Research: Settlement and recruitment of rocky shore invertebrate larvae; plankton dynamics; ballast water treatments; public understanding of science

*Dr Clare Fitzsimmons: Senior Lecturer*
Ridley Building room 2.64, ext. 86673 or Dove Marine Laboratory, ext. 83057
e-mail: [clare.fitzsimmons@ncl.ac.uk](mailto:clare.fitzsimmons@ncl.ac.uk)
Teaching: Coastal governance; integrated coastal management; project management
Research: Governance; multi-scale decision making; trade-off analysis; human-environment interactions; bibliometrics, science indicators and research metrics

*Dr Alan Jamieson: Senior Lecturer*
Ridley Building room 4.67B, ext. 80567
e-mail: [alan.jamieson@ncl.ac.uk](mailto:alan.jamieson@ncl.ac.uk)
Teaching: Marine organisms and environment; deep-sea biology and ecology
Research: Abyssal and hadal biology, ecology and technology; deep-sea fish, scavenging communities
**Dr Martyn Kurr: Teaching Fellow**
Ridley Building room 3.73, ext. 85345
e-mail: martyn.kurr@ncl.ac.uk
Teaching: Marine ecosystems, diversity of marine organisms, field techniques, numerical and statistical methods
Research: Chemical and invasive ecology of seaweeds, and behavioural ecology of shallow water invertebrates

**Dr Sara Marsham: Senior Lecturer; Stage Three Coordinator**
Ridley Building room 4.80, ext. 85868 or Dove Marine Laboratory, ext. 83056
e-mail: sara.marsham@ncl.ac.uk
Teaching: Marine ecosystems; algal biology and ecology; coastal habitat ecology; field techniques; numerical and statistical methods; graduate employability skills
Research: Algal functional groups; plant-animals interactions within the intertidal; algal chemical ecology; engaging students in assessment and feedback

**Dr Miguel Angel Morales Maqueda: Senior Lecturer**
Ridley Building room 4.67a, ext. 88837
e-mail: miguel.morales-maqueda@ncl.ac.uk
Teaching: Physical oceanography
Research: Investigation of the abyssal circulation in the global ocean; oceanographic applications of marine robotics; sea level dynamics; polar oceanography and sea ice; ocean, sea ice and climate modelling.

**Professor Nicholas Polunin: Professor of Marine Environmental Science**
Ridley Building room 5.81, ext. 86675
e-mail: nick.polunin@ncl.ac.uk
Teaching: Fisheries and fish biology; ecology
Research: Population and community ecology of tropical reef fishes; effects of fishing and protection; larvae and juvenile stages of marine fishes

**Dr Heather Sugden: Lecturer**
Ridley Building room 4.74, ext. 85282 or Dove Marine Laboratory, ext. 83059
Teaching: Marine ecosystems; field techniques; numerical and statistical methods
Research: Plant-animal interactions in the intertidal; the dynamics of artificial structures for benthic communities; biogeography of intertidal species and long-term change; marine citizen science

**Dr Guenther Uher: Lecturer; Stage One Coordinator**
Ridley Building room 4.78, ext. 86228
e-mail: guenther.uher@ncl.ac.uk
Teaching: Oceanography; world ocean systems; field techniques in Marine Science; fundamentals of global element cycling; biogeochemistry
Research: Marine emissions of climatically active trace gases; sulphur cycling; interactions between dissolved organic matter; transformations and marine ecosystems; marine photochemistry

**Professor Rob Upstill-Goddard: Professor of Marine Biogeochemistry**
Ridley Building room 4.81, ext. 85065
e-mail: rob.goddard@ncl.ac.uk
Teaching: Oceanography; field techniques in Marine Science; estuarine biogeochemistry; global biogeochemical cycles; world ocean systems
Research: Biogeochemical transformation in coastal seas; marine biogases and transfer of gases across the air-sea interface; use of tracers to determine aqueous transport rates
Dr Ben Wigham: Lecturer; **Degree Programme Director; Research Vessel Manager; University Dive Officer**
Ridley Building room 4.66, ext. 87831 or Dove Marine Laboratory, ext. 83054
e-mail: ben.wigham@ncl.ac.uk
Teaching: Animal physiology and reproduction; deep-sea and polar biology; sub-littoral practical methods (research vessel)
Research: Marine invertebrate reproduction and larval biology; trophic ecology in polar and deep-sea ecosystems; physiology and ecotoxicology of marine invertebrates

**Academic-related Staff**

*Mrs Carol Andrew: Assistant Manager*
Agriculture Building. Ext: 82396
e-mail: carol.andrew@ncl.ac.uk

**Laboratories/Aquaria**
*Mr David Whitaker: Marine Science Laboratory Manager*
Ridley Building room 3.49, ext. 86659
e-mail: david.whitaker@ncl.ac.uk

*Dove Marine Laboratory*
*Mr A. John Knowles: Technician*
Dove Marine Laboratory, ext. 83052
e-mail: a.j.knowles@ncl.ac.uk

**Research Vessel**
*Mr Neil Armstrong* (Master) - 01670 353 793, e-mail: neil.armstrong@ncl.ac.uk
*Mr Barry Pearson* (Ship Mate) - 01670 373 793, e-mail: barry.pearson@ncl.ac.uk

**Administrative Support**

For all queries relating to your degree programme, either:
Visit 4.46 on the 4th floor of the Ridley 2 Building
e-mail: snes.bmsc.support@ncl.ac.uk
Call ext. 86441
Important Dates

You are expected to be in attendance during term time as follows:

**Academic Year 2019 – 2020**

**Autumn Term:**  Monday 23 September 2019 to Friday 13 December 2019  
**Spring Term:**  Monday 6 January 2020 to Friday 27 March 2020  
**Summer Term:**  Monday 27 April 2020 to Friday 12 June 2020

Please note also, the following Semester dates:

**Semester 1:**  Monday 23 September 2019 to Friday 24 January 2020  
**Semester 2:**  Monday 27 January 2020 to Friday 12 June 2020

**Assessment/Reassessment**

Students on taught modular programmes must make themselves available for examination at all times during each of the periods below. You should bear these dates in mind, therefore, when making arrangements for travelling between home and University, vacation employment and holidays.

**Semester 1:**  Monday 13 January 2020 to Friday 24 January 2020 (including Saturday 18 January)  
**Semester 2:**  Monday 18 May 2020 to Friday 5 June 2020 (including Saturday 23 May and Saturday 30 May)  
**Resits:**  Monday 17 August 2020 to Friday 28 August 2020 (including Saturday 22 August)

**ACADEMIC CONTENT AND STRUCTURE OF DEGREE PROGRAMME**

**Aims and Outcomes**

The aims of the Marine Zoology degree programme are:

1. To enable everyone on the degree programme to develop a thorough knowledge and understanding of the natural history of marine organisms and both their zoological and ecological function within the marine ecosystem in the specialist areas of (i) the biology and physiology of marine organisms (ii) the evolution of both organisms and functional morphologies and (iii) the ecology of marine communities, together with appropriate practical and key skills

2. To be able to appreciate the application of this knowledge and understanding to the management of human activities

3. To provide a Marine Zoology programme for well-motivated people from a diversity of social, geographic and academic backgrounds

4. To provide an advanced curriculum enhanced by an active research environment that will encourage: thinking in a critical and constructive manner, awareness of new technologies and the skills and aptitudes needed for the development of a wide variety of careers within Marine Science and other areas of graduate employment

5. To stimulate an informed interest in natural history, evolution and taxonomy and engender an awareness of its importance and its interaction with society and the environment

6. To provide an environment within which everyone can enjoy their learning experience and develop the skills and attitudes to underpin lifelong learning

This is a lot to achieve and we cannot do this alone! Our role is to help you to learn, but **your** contribution and involvement is vital to successfully achieving these aims.
**Intended Learning Outcomes**
The Marine Zoology degree will produce undergraduates who should have, and be able to, demonstrate a knowledge and understanding of:

1. The biology of marine organisms
2. The physiology of marine animals
3. The ecology of marine communities
4. The physical processes occurring in the marine environment
5. The role of interdisciplinary marine science in the management of the marine environment
6. The importance of management and conservation the marine environment
7. Current developments in Marine Zoology

**Structure of the Degree Programme**

**Overall structure**

Marine Science is a subject that has interactions with many other scientific disciplines. This interdisciplinary approach to Marine Science underlies the structure of the degree programme at all Stages. You will gain a thorough knowledge of the biology of marine (and non-marine) organisms, and learn how Marine Science is an important key component of Contemporary Biology, Environmental Biology, Oceanography and Zoology.

Our Marine Science degrees are three year programmes of study presented in three Stages. At each Stage, modules are taken with a combined weighting of 120 credits in a balanced programme with usually 60 credits in each of the two semesters. Each module has its own outline which sets out the Aims and Intended Learning Outcomes for that module. It also explains how that module contributes in a progressive way to your learning so that by the end of the degree programme you will have been successful in achieving the Intended Learning Outcomes of the degree programme. Although the degree programmes are modular in structure, it is also important to be able to synthesise your learning from different modules. You will take part in small group tutorials, attend seminars and these, along with other activities, will provide you with the experience necessary for this.

Although the degree programmes present a tightly integrated modular programme, an essential degree of flexibility has been introduced. At Stage 1 the programmes are an integrated one comprising 120 credits. This programme has been designed to provide a firm basis for advanced study of Marine Zoology but also to give experience of the diversity and breadth of this discipline.

Stage 2 of the degree programme continues to present a balanced programme of study with specialised modules designed to develop your understanding of Marine Zoology in the context of other biological and physicochemical sciences and to continue to develop your key skills. Most modules will address several of the overall aims of the degree programme and the wide variety of methods of examination and assessment used will reflect this. There will also be the opportunity to develop graduate employability skills in Marine Science.

Stage 3 of the degree programme allows you to specialise further in relation to your interests with emphasis placed on a combination of advanced study courses, group activities, and individual study and learning supported by staff supervision, often with the assistance of visiting professional scientists.

You will find that the format of the modules can vary widely - some are entirely lecture based but others have no lectures! In every case a single module with a credit weighting of 20 is regarded as involving 200 study hours, although the formal ‘contact’ hours will be much less than this. Every module involves independent study and how you spend this apparently ‘free’ time will be a major factor determining your overall success.

Full details of the individual modules, the methods of assessment and other relevant information is given in detail in the Module Summaries and on Blackboard (your Virtual Learning Environment).
It is most important that you study these as they form a guide to the learning process you will be engaged with and provide details of how you will be assessed and the rationale for this.

Details of the current Stage of your degree programme are presented below to provide you with an overview.

**Stage One**
Stage 1 provides a balanced programme of modules designed to provide the sound scientific background required for the later stages of the degree programme.

In addition to lectures and practicals, independent field study with appropriate study guides, video and other methods of learning will be used to provide you with a rich and diverse background to your learning. You must pass all of your Stage 1 modules in order to progress to Stage 2.

At Stage 1, students will begin to learn how to supplement the formal taught components of the course with private study and as a Marine Science student you will be assigned to a Personal Tutor who will advise you in all three Stages. It is important that you develop a good relationship with your Tutor who will often act as a referee for you when you have completed your studies.

You are required to see your Tutor at the commencement of each semester, and at the end of the academic year. At Stage 1 you will be seeing your Tutor timetabled sessions in the Academic and Professional Skills for Biosciences module. You may see your Personal Tutor by arrangement at any time and you should do so whenever you have problems - academic, domestic or private matters - such as your health or that of your family, or your living arrangements that might affect your academic progress. Please let your Tutor know about your personal interests and enthusiasms as this will help your Tutor to build-up a positive portfolio of your achievements.

During Stage 1 your Tutor will also be involved in supervising your academic development during small supervision groups as part of MST1204 Academic and Professional Skills for Biosciences, which will include other Stage 1 Marine Science students. These tutorials are important because they will give you the opportunity to go over coursework, discuss issues directly relevant to your course and you will benefit from the opportunity to interact with others. The tutorial sessions are designed to help you and you should enjoy them.

At all stages of your degree programme your academic Tutor will also be directly involved in your work in supervision groups.

Please make sure that your Tutor and the School Office, Ridley 2 building, have your local address in Newcastle (and telephone/mobile number) and remember to inform them of any changes. You can update this information on your S3P portal.

Should you wish to change to another Tutor for any reason, you may discuss this with the Degree Programme Director or Head of School, in confidence.

**Stage One Coordinator**
Overall responsibility for the Marine Biology degree lies with the Head of School, Professor Rob Edwards. He is supported by the Degree Programme Director (Dr Ben Wigham) who is responsible for the day to day running of the Marine Science degrees and they are supported by three Stage Coordinators. Your Stage 1 coordinator is Dr Guenther Uher. Should you have any enquiries concerning the Stage 1 programme you should contact him in Room 4.78 Ridley Building or at guenther.uher@ncl.ac.uk.

**On completing the Stage 1 programme you:**
- will be eager to learn more about Marine Zoology
- will have a sound knowledge of the subject at an introductory level
- will understand the basis for the study of Marine Zoology through both biological and physical sciences
Table 1 outlines the module structure for Stage 1 of the Marine Zoology Degree programme. All Stage 1 modules are shared with the two other Marine Science degree programmes so that students wishing to proceed to the study of related scientific disciplines are able to do so.

Table 1 - Stage 1 module structure for 2019 - 2020

All candidates shall take the following compulsory modules:

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<thead>
<tr>
<th>Code</th>
<th>Descriptive title</th>
<th>Total Credits</th>
<th>Credits Sem 1</th>
<th>Credits Sem 2</th>
<th>Level</th>
</tr>
</thead>
<tbody>
<tr>
<td>MST1201</td>
<td>Marine Biology</td>
<td>20</td>
<td>20</td>
<td></td>
<td>4</td>
</tr>
<tr>
<td>MST1202</td>
<td>Diversity of Marine Animals</td>
<td>20</td>
<td>20</td>
<td></td>
<td>4</td>
</tr>
<tr>
<td>MST1203</td>
<td>The Marine Environment</td>
<td>20</td>
<td></td>
<td>20</td>
<td>4</td>
</tr>
<tr>
<td>MST1204</td>
<td>Academic and Professional Skills for Biosciences</td>
<td>20</td>
<td>10</td>
<td>10</td>
<td>4</td>
</tr>
<tr>
<td>MST1205</td>
<td>Marine Practical Skills I</td>
<td>20</td>
<td>10</td>
<td>10</td>
<td>4</td>
</tr>
</tbody>
</table>

All candidates shall take 20 credits of optional modules normally selected from the following list:

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<tr>
<th>Code</th>
<th>Descriptive title</th>
<th>Total Credits</th>
<th>Credits Sem 1</th>
<th>Credits Sem 2</th>
<th>Level</th>
</tr>
</thead>
<tbody>
<tr>
<td>MST1206</td>
<td>Marine Microbiology and Primary Producers</td>
<td>20</td>
<td>20</td>
<td></td>
<td>4</td>
</tr>
<tr>
<td>BIO1020</td>
<td>Genetics and Evolution</td>
<td>20</td>
<td>20</td>
<td></td>
<td>4</td>
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With the approval of the Degree Programme Director, alternative optional modules to those listed above may be selected.

Content

The Marine Science degree programmes offer a balanced range of modules designed to provide the sound scientific background required by a Marine Science graduate. Introductory modules at Stage 1 in Marine Biology, Diversity of Marine Animals, and the Marine Environment are followed by detailed coverage of Marine Ecology, Marine Vertebrate Biology & Ecology, and Animal Function at Stage 2, followed finally by integrated Advanced modules at Stage 3 designed to bring students an understanding of the thresholds of current research in Marine Science and how it benefits society.

Each module has a Module Leader to whom you should address any questions about that module. Each module is assessed individually, within the semester in which it is taught. The pass mark for all modules at Stage 1 is 40% and you must pass all 120 credits before proceeding to Stage 2. If you fail any of your modules at Stage 1, you will most likely be required to be reassessed (take a resit examination). The resits take place during late August irrespective of the semester in which the module was taught. All modules have some degree of in-course assessment. Please ensure that you are aware of the methods of assessment for each of the modules you will be taking.

Residential Field Trips

During the summer break between Stage 1 and Stage 2 (Sunday 21st June to Sunday 28th June 2020) you will be expected to attend a compulsory residential field trip to the Millport Marine Biological Station on the Isle of Cumbrae off the West Coast of Scotland. The field trip focuses on the identification and classification of plants and animals from different marine environments, and the development of practical fieldwork skills and group work through participation in four group activities. Work undertaken during the trip contributes to the assessment of the Stage 2 module Marine Practical Skills II. While this course is subsidised by the School, you will be expected to make a financial contribution to attend the trip. Full information on this field trip will be provided during induction week and semester 2 of Stage 1.
Reading Lists
Reading lists for each module are available in the Module Outlines, Module Summaries and online at https://rlo.ncl.ac.uk/. There is also an extensive Sustainability Resource Guide available at http://libguides.ncl.ac.uk/sustainability.

<table>
<thead>
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<th>Marine Biology Course Books</th>
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<tr>
<td>While each module has its own requirements by way of reading lists you are not likely to need to purchase a book for each module; consulting library copies will suffice.</td>
</tr>
<tr>
<td>When you arrive in Newcastle you will be provided with a copy of the recommended text: Levinton, J.S. (2011). <em>Marine Biology: Function, Biodiversity, Ecology</em>. Oxford University Press (includes CD-ROM). Levinton’s text is widely regarded as the most captivating, accessible and comprehensive text for undergraduate Marine Science courses.</td>
</tr>
<tr>
<td>We will also provide you with a copy of Johnson and Scott (2019). <em>Study and Communication Skills for the Biosciences</em>. Oxford University Press.</td>
</tr>
<tr>
<td>In addition to these, the following titles are ones which will serve a number of Stage 1 and 2 courses and so it might be useful to have access to your own copy.</td>
</tr>
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Required Equipment/Resources

**Instruments**
You must also routinely bring an adequate set of dissecting instruments and drawing materials to each laboratory class. Dissecting kits will be provided for you so you will not need to purchase these.

**Calculator**
You will need a calculator for use in practicals, field work and examinations. The University has approved only the CASIO models FX-83GTPPLUS, Casio FX-85GTPPLUS and FX-115MS. **No others are allowed in examinations.** Since you will need a model with linear regression functions, you should only purchase either the FX83 or FX115.

**Protective Clothing**
For laboratory work you will be provided with a laboratory coat, so you do not need to purchase one; inform the Secretary of your size in advance of your arrival (see e-mail). It is your responsibility to ensure you have this to wear in ALL practical classes; you will not be permitted entry to labs and will lose associated marks, if not furnished with your lab coat.

For field work you must purchase a pair of wellington boots and bring these to ALL field classes. You will **not be permitted to undertake any boatwork** unless you are suitably equipped with wellington boots. Lace-up walking-style boots are not appropriate. Purchasing warm sensible waterproof raingear now will be essential, and these should last you for the three years of your degree programme: jacket or coat with hood; waterproof trousers. We also advise that you buy a woolly hat, gloves, scarf, and a rucksack or bag appropriate for field trips.

You must protect yourself against exposure to the cold, wet and sun. Staff will provide guidance concerning suitable clothing and should be consulted if in doubt. Marine Science students are expected to appreciate the rigours of outdoor work. You must have warm clothing for fieldwork. It may be colder on the shore or on a research vessel than you would expect.
Skills
On completion of the degree programme in Marine Zoology you should be able to demonstrate a range of transferable study skills and techniques including:

- written communication in technical and popular science
- oral and poster presentation skills
- team work and interpersonal communication
- computer literacy
- numeracy and statistical expertise
- planning, organisation and independent learning
- awareness of your responsibility to society and the environment, including a potential to influence society
- motivation and the ability to build upon the learning experiences of the degree programme and the range of learning experiences encountered
- capability in obtaining and developing careers in a wide range of work environments

Assessment
We wish to assess a great variety of different skills and to provide you with suitable feedback on your performance at each Stage of the degree programme. The Assessment Methods include:

Self-Assessment - you have a responsibility for your own learning and our feedback will help you in this self-assessment process.

Formal Examinations - the rationale for each of these is explained in the Module Outlines and may include:

(a) Unseen written examinations may include questions of a variety of types (e.g. multiple choice, short answer, essay, numerical exercise), to assess the acquisition of factual knowledge and your understanding of this. The examination may also assess the development of your theoretical understanding, and your ability to critically evaluate relevant information and concepts

(b) Some examinations may include practical tests designed to assess technical skills and performance in practical procedures and/or your ability to carry out numerical analysis and interpretation of data

Continuous Assessment - this can involve evaluation of written materials and coursework as well as the evaluation of oral presentations. This may be both formative and summative. Where an assessment is summative we will provide details of the relative weighting given to each type of assessment used and at Stages 2 and 3 will use the marks in classifying your degree. Assessments may include:

(a) In-course evaluation of performance in practical classes
(b) In-course evaluation of coursework
(c) Assessment of written materials, including essays, library projects, reviews and other written assignments
(d) Assessment of oral presentations
(e) Assessment of dissertation and project reports

Individual Module Leaders will announce details and deadlines for each assignment either during lectures and practical sessions and/or via Blackboard. If you are unsure of any deadline or if you are unable to complete an item of assessed work through illness or other circumstances you should contact the appropriate Module Leader or your Personal Tutor immediately. This is very important because missed or late assessments, due to unavoidable circumstances, can be taken into account when your final module mark is calculated.

Submitted Work
All work is to be submitted to the School Office unless you have been given other instructions (for example to submit a piece of work at the end of a practical session or to submit it electronically via Blackboard). The deadline for submissions is usually on a Monday by 2pm. Every piece of work must
have a completed cover sheet that has been date stamped and signed. You should print this cover sheet off from the NESS system for each piece of work. You must keep a copy of every major item of work and you may be requested to submit a copy of your work electronically through Turnitin via Blackboard. **If you do submit any work through Turnitin, you must retain the submission receipt as it may be needed as evidence of electronic submission.** Extensions of deadlines may only be granted by the Degree Programme Director and Scrutiny Committee, although you should also consult your Personal Tutor (and Project Supervisor or Module Leader where appropriate). **You must submit a PEC form to apply for an extension to coursework.**

In order to maintain quality and to help facilitate comparisons between years, some of the work you submit may be retained by your tutors. You will still gain feedback but you will rely on your copy of the work for content. The School aims to return all marked with complete with feedback within 20 working days of the submission deadline.

A common marking standard is used for all assessment purposes. Marks are available on a scale 0 - 100, and the following standard divisions are applied:

- > 70%  
  1st (First Class)
- 60-69%  
  2:1 (Upper Second Class)
- 50-59%  
  2:2 (Lower Second Class)
- 40-49%  
  3rd (Third)
- < 40%  
  Fail at Honours

The descriptive criteria that staff will use in marking your work and that the Board of Examiners will consult in classifying degrees are available on page 17 of this handbook, on Blackboard and your USB drive.

**Penalties for Non-compliance with Assessment Requirements**

Failure to submit, for the purposes of continuous or in-course assessment, work contributing the WHOLE of the assessment of a module will result in the award of a mark of zero for that module and students must resit. Failure to submit, for the purposes of continuous or in-course assessment, work contributing PART of the assessment of a module will result in the award of a mark of zero for that element of the assessment of the module.

Work required for the purposes of continuous or in-course assessment and contributing to the final mark for the module, which is submitted after the deadline set for the submission of that work, shall be penalised as follows:

Any piece of work submitted within 7 days of the deadline for submission without good cause (approved by PEC form procedures) will receive a maximum of a pass park (40%). Work submitted later than 7 days, with no PEC form approved extension, will be marked as 0%

**Examinations and Past Papers**

Attendance at formal written examinations is compulsory; if you are absent you will be awarded a mark of zero and must resit. If you then pass you will be credited at the maximum with a 'nominal' pass mark of 40. Past Examination papers are not normally available for Stage 1 exams, but Lecturers will provide a ‘sample paper’ to illustrate the exam format in each module.

**Reassessment**

Any students failing modules will normally be expected to resit in August of the same year. If you do not attend your resit in August you will be deemed to have failed the attempt. Divergence from the above must be approved by the University Concessions Committee.

**Provisional Marks**

Assessments for modules taken in the first semester are provisional only and are subject to confirmation at the meeting of the Board of Examiners to be held in June.
Your Final Degree Mark
The final degree mark will be based on both your Stage 2 mark (25%) and your Stage 3 mark (75%). Your final degree class is determined by the Board of Examiners by use of both an averaging of your module marks in Stages 2 and 3, and an examination of the distribution of marks between grade classes (e.g. 1’s, 2:1’s, etc.). This latter method is known as preponderance. If the average mark is not more than two percentage points below the normal mark range for a degree class (i.e. 68% for a 1st, 58% for a 2:1, etc.), but more than 50% of the weighted (Stage 2: 25%, Stage 3: 75%) module marks are in the higher degree class and not more than $\frac{1}{6}$ of the total credit marks are two or more degree classes below the higher degree class, then this higher degree class is awarded. In other words if, for example, a student has an average mark of 59% but more than half their weighted module marks are 2:1 or 1st class marks, and less than $\frac{1}{6}$ of their module marks are a 3rd or below, then the student is awarded a 2:1 degree. Moderation of degree marks is done at the discretion of the Board of Examiners.

Student Questionnaires
Feedback will be sought via online questionnaires which will cover either, the module and its relationship to the degree as a whole or, on occasion, to the teaching of individual module components. Questionnaires may also refer to each Stage of the degree and, for final year students, the degree programme as a whole. Please use them intelligently and make your contribution to the on-going development of the degree programme. Information derived from the module questionnaires will be passed to the Student- Staff Liaison Committee for comment and to ensure an effective dialogue in the provision of the degree programme.

SCHOOL OF NATURAL AND ENVIRONMENTAL SCIENCES FACILITIES

Dove Marine Laboratory
The Dove Marine Laboratory provides the specialised aquarium, teaching and research facilities required by the School of Natural and Environmental Sciences. The laboratory provides a venue for specialised courses in the biology of marine organisms, for field courses and field work and provides a variety of specialised support facilities e.g. recirculating sea water, temperature control rooms etc that you may use in your research project. The Dove Marine Laboratory is the focus for the important liaison with schools and colleges throughout the region. It gives good access to both rocky and sandy shores with Cullercoats Bay as a spectacular backdrop.

Research Vessel
The School is the administrative focus for the University’s sea going research vessel RV Princess Royal. This purpose built research vessel is equipped with advanced scientific and navigational equipment to provide the University with its own first class sea going research facility. The vessel is used for research purposes by many Schools, but is also part of the teaching resources for the Marine Science degree programmes. You will all take part in a number of cruises on the vessel as you learn current methodologies in plankton, benthos and oceanographic research. Some of you will also use the boat during your Research Project either in the Tyne Estuary or the North Sea. Because of this you will all also attend a course on Safety at Sea. The Research Vessel is operated by a Master and the technical staff of the School.

Marine Science Society
The Marine Science Society aims to:
• Act as a platform for amalgamation between a Marine Science degree and extra-curricular activities.
• Provide relevant unique experiences to members during their time with university
• Strengthen the relationship between marine science students of all year groups
Activities to be offered include:
• Daytrips such as collecting research / beach cleans
• Hosting / attending guest lectures
• Social functions such as the Summer Ball
• Opportunities to practice presentational skills
• Laboratory / field based work experience
• Themed science media & craft evenings
• Friendly sports games with other societies
For more information feel free to join our Facebook page at - https://www.facebook.com/marinesciencesociety/
If you would like any more information regarding the society please do not hesitate to get in contact with us.

Health and Safety
Risk Assessments must be undertaken with respect of any high hazard work at the University. Assessments are required in order to demonstrate that the work is safe to undertake and being done in a legally permitted way. For some work the law expressly requires additional training which can be obtained via the School Safety Officers from the University Safety Office. Risk assessments are generally prepared by teaching staff for your taught practicals, however any work undertaken outside of formal taught sessions must be accompanied by a risk assessment. If you require any advice on this the School Safety Officer is Rachael Savidis rachael.savidis@ncl.ac.uk.
This document replaces the September 2014 SAgE Marking Criteria for Level 4, 5, 6 and 7 modules. It recognises that we mark modules, not programmes and that a higher level of achievement is required to pass modules at Level 7 than at Levels 4, 5 and 6.

The descriptive equivalents are intended as a guideline only and criteria will not necessarily apply equally to all pieces of assessed work (for example, presentational issues are likely to be less important for an answer to an examination question than for a project dissertation). The Faculty expects that examiners will use the whole of the marking scale and to interpret these criteria in the context of the specific learning outcomes of the module or piece of assessed work, as indicated in the Module Outline Form. Where appropriate, other marking criteria may be used and in such cases they should be made available to students in advance of the assessment. It is important to ensure that feedback comments made on all assessed work justify the final mark awarded based on these descriptors and clear explanations for any deviations should be given.

APPLICATION OF CRITERIA
- The criteria are intended to be applicable in principle to most types of assessment. They should form the basis for more specialised criteria for specific assessments.
- A particular piece of assessment may relate to some or all of the criteria. Assessments should normally test more than one criterion.
- The criteria should be interpreted in relation to the FHEQ level (Stage) of the assessment.
- The criteria should be interpreted in relation to what can reasonably be expected within the constraints of the assessment, such as time available or word limit.
- The mark awarded should reflect the best fit to the criteria used. Weighting of criteria and thresholds for specific aspects are not prescribed.
- Appropriate presentation of material (structure, use of language, oral and visual communication) is considered to be implicit in the criteria.

TERMINOLOGY
- **Evidence** could be from taught material, reading, calculation, experimentation or other forms of practical activity.
- **Learning outcomes** should be defined by module outlines or additional guidance, for example from lecture outlines.
- **Expected material** is what would be needed to answer a question fully.
- **Going beyond taught material** could involve use of additional material from wider reading or interpretation of taught material in ways that are not directly implied.
- **A problem** could be conceptual or mathematical, theoretical or practical, seen or unseen and small-scale or large-scale.
- **Novel** means new to the student.
- **A concept** is an abstract idea or principle that can be applied to help interpret information, solve a problem or formulate a plan.
<table>
<thead>
<tr>
<th>Criterion</th>
<th>Mark range</th>
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<tbody>
<tr>
<td><strong>Knowledge and understanding: accuracy, completeness and relevance</strong></td>
<td>0-24</td>
</tr>
<tr>
<td>Contains very little material addressing the topic. Incomplete and/or incoherent.</td>
<td></td>
</tr>
<tr>
<td>Contains sufficient relevant accurate material to show evidence of partial attainment of learning outcomes but contains substantial errors and/or omissions.</td>
<td></td>
</tr>
<tr>
<td>Contains sufficient relevant accurate material to show evidence of attainment of learning outcomes. May contain significant errors and/or omissions.</td>
<td></td>
</tr>
<tr>
<td>Mainly relevant and accurate. Includes a substantial portion of the expected material with appropriate detail. There may be some errors and/or omissions.</td>
<td></td>
</tr>
<tr>
<td>Relevant and accurate with few errors and/or omissions. Includes most of the expected material in detail and goes beyond taught material.</td>
<td></td>
</tr>
<tr>
<td>Coverage of topic is thorough; almost all relevant and accurate, and substantially beyond taught material.</td>
<td></td>
</tr>
<tr>
<td><strong>Use of evidence</strong></td>
<td>Little or no appropriate use of evidence.</td>
</tr>
<tr>
<td><strong>Problem investigation and solving</strong></td>
<td>Does not show ability to investigate problems.</td>
</tr>
<tr>
<td><strong>Application of concepts</strong></td>
<td>Does not show awareness of and ability to apply concepts.</td>
</tr>
</tbody>
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