School of Environmental and Life Sciences

MARI2300: Marine Biology

Callaghan and Ourimbah
Semester 1 - 2024

COURSE OUTLINE

www.newcastle.edu.au
CRICOS Provider 00109J

OVERVIEW

Course Description

Marine environments are among the most diverse ecosystems on Earth. This course provides a fundamental understanding of how oceans work, and the diversity of marine life that exists within the ocean environment. Students will explore in depth biological diversity of the oceans from microbes to vertebrates. The laboratory and fieldwork component focus on the identification, biology and diversity of Australia's unique marine organisms.

The course is delivered via a series of workshops, online content, laboratory and field sessions. These encompass the use of molecular and morphological data to classify the major groups of marine organisms. Course assessment includes a written critical opinion of a current issue in marine biology; application of skills to identify marine organisms in a practical setting; and a written examination.

Academic Progress Requirements

Nil

Requisites

Students must have successfully completed MARI1000 to enrol in this course.

Assumed Knowledge

BIOL1002, SCIE1002, and either BIOL1040 and BIOL1070 or BIOL1001

Contact Hours

Callaghan
Integrated Learning Session
Online
2 hour(s) per week(s) for 12 week(s) starting Week 1

Laboratory *
Face to Face On Campus
3 hour(s) per week(s) for 12 week(s) starting Week 1

Ourimbah
Integrated Learning Session
Online
2 hour(s) per week(s) for 12 week(s) starting Week 1

Laboratory *
Face to Face On Campus
3 hour(s) per week(s) for 12 week(s) starting Week 1

* This contact type has a compulsory requirement.

Unit Weighting

10

Workload

Students are required to spend on average 120-140 hours of effort (contact and non-contact) including assessments per 10 unit course.

CONTACTS

Course Coordinator

Callaghan and Ourimbah
Dr Megan Huggett
Megan.Huggett@newcastle.edu.au
(02) 43484025
Consultation: Via Email

Teaching Staff

Other teaching staff will be advised on the course Canvas site.

School Office

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9am-5pm (Mon-Fri)

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SYLLABUS

Course Content

1. The ocean environment
2. Marine habitat types
3. Life in the oceans; marine life
    - Introduction to classification
    - Major groups of marine organisms
4. Biology of marine life
5. Human impact on the marine environment

Course Learning Outcomes

On successful completion of this course, students will be able to:

1. Accurately identify a wide range of marine organisms
2. Describe the role of specific organisms in marine ecosystems
3. Safely apply practical skills in identifying common seaweeds, marine plants and marine animals
4. Critically apply the use of molecular and morphological data in phylogenetics
5. Critically explain current themes in marine biological research

Course Materials

Multi-Media Resource:
• Videos of lectures and additional lecture content will be available online via Canvas
• Practical Manual for the lab component.

Recommended Text:
• Marine Biology 12th Edition (2024) Castro, P. and M. Huber (earlier versions are acceptable)
• Invertebrate Zoology. A tree of life Approach (2021) Schierwater, B. and R. DeSalle

COMPULSORY REQUIREMENTS

In order to pass this course, each student must complete ALL of the following compulsory requirements:

Contact Hour Requirements:

• Laboratory: There is a compulsory attendance requirement in this course. Students must attend 80% or more of the laboratory sessions.

SCHEDULE

Week	Week Begins	Topic	Learning Activity	Assessment Due
1	26 Feb	Course Introduction Introduction to Marine life	During the allocated laboratory time please complete online lab inductions and field medical questionnaire (online)	
2	4 Mar	Eukaryotes: Fungi and Protists	Laboratory 1 Protists (F2F) On campus	
3	11 Mar	Eukaryotes: Plants	Laboratory 2 Coastal Plants (F2F) Students make their own way to meet at field site - Granny's Pool	Lab 1 due at start of timetabled lab session (this week, in the field) (3%) Online Quiz 1 (3%) Quiz opens Monday 9am closes Sunday 11:59pm
4	18 Mar	Eukaryotes: Placozoa - Ctenophora	Laboratory 3 Sponges, Cnidaria and Ctenophores (F2F) On campus	Lab 2 due at start of timetabled lab session (3%)
5	25 Mar	Eukaryotes: Marine Worms-Molluscs	Laboratory 4 Worms (F2F) On campus	Lab 3 due at start of timetabled lab session (3%)
6	1 Apr	Eukaryotes: Arthropoda	No labs in Week 6 due to Easter Monday public holiday	Online Quiz 2 (3%) Quiz opens Monday 9am closes Friday 11:59pm
7	8 Apr	Eukaryotes: Echinodermata	Laboratory 5 Molluscs (F2F) On campus	Lab 4 due at start of timetabled lab session (3%) Essay due Friday 11:59pm (15%)
Mid-Semester Recess				
Mid-Semester Recess				
8	29 Apr	Eukaryotes: Chordata	Laboratory 6 Arthropods (F2F) On campus	Lab 5 due at start of timetabled lab session (3%) Online Quiz 3 (mid-semester 11%) Quiz opens Monday 9am closes Sunday 11:59pm
9	6 May	Eukaryotes: Chordata	Laboratory 7 Echinoderms (F2F) On campus	Lab 6 due at start of timetabled lab session (3%)
10	13 May	Phylogenetics: Prokaryotes and Eukaryotes	Laboratory 8 Fish (F2F) On campus	Lab 7 due at start of timetabled lab session (3%)
11	20 May	Viruses	Laboratory 9 Other Chordata (F2F) On campus	Lab 8 due at start of timetabled lab session (3%)
12	27 May	Aquatic Microbiology: Prokaryotes	Laboratory 10: Prac Exam (F2F) On campus	Lab 9 due at start of timetabled lab session (3%) Prac Exam (8%) in timetabled lab session
13	3 Jun	Revision	Student guided revision session (optional)	Online Quiz 4 (3%) Quiz opens Monday 9am closes Sunday 11:59pm
Examination Period				
Examination Period				

ASSESSMENTS

This course has 4 assessments. Each assessment is described in more detail in the sections below.

	Assessment Name	Due Date	Involvement	Weighting	Learning Outcomes
1	Essay	Week 7, Friday 12th April 2024 by 11:59pm	Individual	15%	2, 4, 5
2	Exam	Undertaken during the Formal Examination Period.	Individual	30%	1, 2, 4, 5
3	Laboratory Exercises	Practical Exercise 1, lab work is due at the start of the next lab class. Practical Exercise 2 (Practical Exam) is done in Week 12.	Individual	35%	1, 3
4	Quiz - Class	Quizzes will become available in Canvas on Monday at 9am in Week 3, 6, 8 and 12. Each quiz will remain open for one (1) week and is due by Sunday at 11:59pm	Individual	20%	1, 4, 5

Late Submissions The mark for an assessment item submitted after the designated time on the due date, without an approved extension of time, will be reduced by 10% of the possible maximum mark for that assessment item for each day or part day that the assessment item is late. Note: this applies equally to week and weekend days.

Assessment 1 - Essay

Assessment Type Essay
Purpose The purpose of the written assignment is to assess student's ability to (i) identify a current issue in marine biology, (ii) critically evaluate scientific data and (iii) synthesize peer reviewed scientific literature. Critical thinking and clear written communication are fundamental abilities for scientists.
Description A scientific essay based on reading, interpretation and synthesis of the published literature on a current issue in marine biology. Students will be able to select from a variety of topics. The essay is completed as an individual.
Weighting 15%
Due Date Week 7, Friday 12th April 2024 by 11:59pm
Submission Method Online
Assessment Criteria Critical evaluation of scientific literature. Communication of scientific concepts to the general public. Details of assessment criteria will be available on Canvas.
Return Method Online
Feedback Provided Online - May 3, 2024. Online feedback provided directly on assessment item via Canvas.

Assessment 2 – Exam

Assessment Type Formal Examination
Purpose The Formal Examination is designed to test the individual student's knowledge of fundamental concepts in marine biology and their ability to describe and interpret these concepts. The Formal Examination is prepared in accordance with the Course Management and Assessment Procedure Manual.
Description The Formal Examination is a series of multiple choice, short answer and essay style questions relating to the material covered in lectures.
Weighting 30%
Length Two (2) hours
Due Date Undertaken during the Formal Examination Period.
Submission Method Formal Exam
Assessment Criteria Core and fundamental knowledge of marine biology concepts and methods using multiple choice, short answer and essay style questions.
Return Method Not Returned
Feedback Provided No Feedback

Assessment 3 - Laboratory Exercises

Assessment Type Tutorial / Laboratory Exercises
Purpose The practical exercises demonstrate a student's understanding of Course Learning Objectives 1, 2, and 3. These refer to the application of practical skills to identify marine organisms and to explain the role of specific organisms in marine ecosystems. Practical work will be conducted in a group; however, assessments will be undertaken individually.
Description Practical Exercise 1 consists of nine (9) labs worth 3% each for a total of 27%. These labs include answers to questions, as well as drawings and identifications of marine organisms based on a range of dissections and observations done during lab classes. Each lab will be submitted at the start of the following lab class. Practical Exercise 2 is worth 8% and is a face to face practical exam assessing both the student's ability to identify a range of marine organisms and the students' understanding of the role of these organisms in marine ecosystems
Weighting 35%
Length Exercise 2: One (1) hour and 20 minutes
Due Date Practical Exercise 1, lab work is due at the start of the next lab class. Practical Exercise 2 (Practical Exam) is done in Week 12.
Submission Method In Class
Assessment Criteria Competency in identifying marine organisms and assessment of understanding of the role of various features of marine organisms using short answer questions and practical exercises. Details of assessment criteria will be available on Canvas.
Return Method In Class
Feedback Provided Returned Work - Each week. Work will be returned with feedback in the following timetabled laboratory session.

Assessment 4 - Quiz - Class

Assessment Type Quiz
Purpose The purpose and benefit of regular quizzes is to provide the student with regular feedback on their learning. These quizzes highlight fundamental areas of marine biology and may stimulate discussion with tutors and academic staff.
Description Four (4) online quizzes will be available via Canvas. Three (3) of the quizzes have ten (10) multiple choice questions and are worth 3%. These are due in Weeks 3, 6 and 13. One (1) quiz is a mid-semester quiz and has 25 multiple choice questions and is worth 11%. This is due in Week 8. In all quizzes the questions are drawn from a larger pool of questions.
Weighting 20%
Length Variable
Due Date Quizzes will become available in Canvas on Monday at 9am in Week 3, 6, 8 and 13. Each quiz will remain open for one (1) week and is due by Sunday at 11:59pm
Submission Method Online
Assessment Criteria Core and fundamental knowledge of marine biology identifications, concepts and methods using multiple choice questions.
Return Method
Feedback Provided Online

ADDITIONAL INFORMATION

Grading Scheme

This course is graded as follows:

Range of Marks	Grade	Description
85-100	High Distinction (HD)	Outstanding standard indicating comprehensive knowledge and understanding of the relevant materials; demonstration of an outstanding level of academic achievement; mastery of skills*; and achievement of all assessment objectives.
75-84	Distinction (D)	Excellent standard indicating a very high level of knowledge and understanding of the relevant materials; demonstration of a very high level of academic ability; sound development of skills*; and achievement of all assessment objectives.
65-74	Credit	Good standard indicating a high level of knowledge and

	(C)	understanding of the relevant materials; demonstration of a high level of academic achievement; reasonable development of skills*; and achievement of all learning outcomes.
50-64	Pass (P)	Satisfactory standard indicating an adequate knowledge and understanding of the relevant materials; demonstration of an adequate level of academic achievement; satisfactory development of skills*; and achievement of all learning outcomes.
0-49	Fail (FF)	Failure to satisfactorily achieve learning outcomes. If all compulsory course components are not completed the mark will be zero. A fail grade may also be awarded following disciplinary action.

*Skills are those identified for the purposes of assessment task(s).

Attendance

Attendance/participation will be recorded in the following components:

- Laboratory (Method of recording: In person by Course Coordinator during timetabled laboratory session.)

Communication Methods

Communication methods used in this course include:

- Canvas Course Site: Students will receive communications via the posting of content or announcements on the Canvas course site.
- Email: Students will receive communications via their student email account.
- Face to Face: Communication will be provided via face to face meetings or supervision.

Course Evaluation

Each year feedback is sought from students and other stakeholders about the courses offered in the University for the purposes of identifying areas of excellence and potential improvement.
As a result of student feedback, the following changes have been made to this offering of the course:

- Modifications to field work to allow students to collect their own samples during the field session in Week 2, to be used in several subsequent lab sessions.
- Lab work due weekly rather than in a large submission at the end of semester.
- Revised assessment for laboratory classes, to reduce drawing and increase emphasis on the characteristic traits of various marine organisms.

Oral Interviews (Vivas)

As part of the evaluation process of any assessment item in this course an oral examination (viva) may be conducted. The purpose of the oral examination is to verify the authorship of the material submitted in response to the assessment task. The oral examination will be conducted in accordance with the principles set out in the Oral Examination (viva) Procedure. In cases where the oral examination reveals the assessment item may not be the student's own work the case will be dealt with under the Student Conduct Rule.

Academic Misconduct

All students are required to meet the academic integrity standards of the University. These standards reinforce the importance of integrity and honesty in an academic environment. Academic Integrity policies apply to all students of the University in all modes of study and in all locations. For the Student Academic Integrity Policy, refer to https://policies.newcastle.edu.au/document/view-current.php?id=35.

Adverse Circumstances

The University acknowledges the right of students to seek consideration for the impact of allowable adverse circumstances that may affect their performance in assessment item(s). Applications for special consideration due to adverse circumstances will be made using the online Adverse Circumstances system where:

1. the assessment item is a major assessment item; or
2. the assessment item is a minor assessment item and the Course Co-ordinator has specified in the Course Outline that students may apply the online Adverse Circumstances system;

3. you are requesting a change of placement; or
4. the course has a compulsory attendance requirement.

Before applying you must refer to the Adverse Circumstance Affecting Assessment Items Procedure available at:
https://policies.newcastle.edu.au/document/view-current.php?id=236

Important Policy Information

The Help button in the Canvas Navigation menu contains helpful information for using the Learning Management System. Students should familiarise themselves with the policies and procedures at
https://www.newcastle.edu.au/current-students/respect-at-uni/policies-and-procedures
that support a safe and respectful environment at the University.

Other Information

Students must complete a safety induction and fieldwork medical questionnaire prior to undertaking any practical sessions including the laboratory sessions and practical exam. The safety induction is undertaken online and in Week 2 during the first face to face laboratory session.

This course outline was approved by the Head of School. No alteration of this course outline is permitted without Head of School approval. If a change is approved, students will be notified and an amended course outline will be provided in the same manner as the original.