UNSW Course Outline

MSCI1001 Introductory Marine Science - 2024

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General Course Information

Course Code : MSCI1001
Year : 2024
Term : Term 1
Teaching Period : T1
Is a multi-term course? : No
Faculty : Faculty of Science
Academic Unit : School of Biological, Earth and Environmental Sciences
Delivery Mode : In Person
Delivery Format : Standard
Delivery Location : Kensington
Campus : Sydney
Study Level : Undergraduate
Units of Credit : 6

Useful Links

Handbook Class Timetable

Course Details & Outcomes

Course Description

This course introduces students to a cross-section of the theory and application of marine science and includes an opportunity to experience field research. Spanning the disciplines of geology, chemistry, physics, and biology provides a fundamental understanding of how oceans

work. Topics covered include: the chemistry of seawater; air-sea interactions; ocean circulation; waves, tides, and coastlines; biological productivity and biological diversity; problems and solutions to issues facing marine ecosystems. Lectures and tutorials are face to face. The course requires a compulsory four-day fieldtrip to Smiths Lake is held during the mid-term break, involving personal costs for students.

Course Aims

The course will provide an understanding of how ocean ecosystems work. Students will develop a basic understanding of how the physics and chemistry of the ocean influence the biology and ecology of marine organisms, the problems and issues facing marine ecosystems and the solutions being developed to address these issues.

Relationship to Other Courses

This course is ideally taken prior to the following more advanced marine sciences subjects:

MSCI3001 Oceanographic Processes

BIOS2091 Marine and Aquatic Ecology

BIOS3081 Ocean Biology and Fisheries

GEOS3731 Coastal Geomorphology

MSCI3051 Fundamentals of Climate Change

BIOS2031 Biology of Invertebrates is a complementary course that provides substantially more biological detail for some of the marine groups.

BIOS6692 Advanced Underwater Field Ecology

Course Learning Outcomes

Course Learning Outcomes
CLO1 : Describe the physical forces that drive coastal and oceanic processes and explain how they relate to flow regimes over different temporal and spatial scales.
CLO2 : Describe the chemical properties of seawater and explain the consequences for ocean acidification of the build-up of carbon dioxide in the atmosphere.
CLO3 : Analyse the major drivers of evolution of marine organisms and how the major taxonomic groups of marine organisms differ.
CLO4 : Communicate discipline specific information to non-expert scientific audiences.
CLO5 : Communicate discipline specific information and scientific results in a written form with appropriate referencing.

Course Learning Outcomes	Assessment Item
CLO1 : Describe the physical forces that drive coastal and oceanic processes and explain how they relate to flow regimes over different temporal and spatial scales.	• Seminar Presentation • Field trip report • Final Exam
CLO2 : Describe the chemical properties of seawater and explain the consequences for ocean acidification of the build-up of carbon dioxide in the atmosphere.	• Seminar Presentation • Field trip report • Final Exam
CLO3 : Analyse the major drivers of evolution of marine organisms and how the major taxonomic groups of marine organisms differ.	• Seminar Presentation • Field trip report • Final Exam
CLO4 : Communicate discipline specific information to non-expert scientific audiences.	• Seminar Presentation
CLO5 : Communicate discipline specific information and scientific results in a written form with appropriate referencing.	• Field trip report

Learning and Teaching Technologies

Moodle - Learning Management System | Blackboard Collaborate | Microsoft Teams | Zoom | Echo 360

Learning and Teaching in this course

Teaching is this course is designed to develop group and independent learning skills. The course is taught by experts in their field so students have access to the most uptodate knowledge in their lectures. Students also develop communication skills and learn how to communicate

scienctific information to different audiences. The course is 'hands-on' so students get real-world experience how to design and conduct research in the field.

Assessments

Assessment Structure

Assessment Item	Weight	Relevant Dates
Seminar Presentation Assessment Format: Individual	20%	Start Date: 12/02/2024 12:00 AM Due Date: 14/03/2024 05:00 PM
Field trip report Assessment Format: Individual	35%	Start Date: 12/02/2024 12:00 AM Due Date: 23/03/2024 12:00 PM
Final Exam Assessment Format: Individual	45%	Start Date: During exam period Due Date: During exam period

Assessment Details

Seminar Presentation

Assessment Overview

You will submit a pre-recorded three-minute seminar presentation in Week 5 on a research paper selected from a list of papers provided (10%).
Then, during class in Week 7/8, you will provide a brief critical review of three other students' seminars after viewing them using a marking rubric provided and providing a written review (10%). You will receive a written review of your presentations and reviews of student presentations. Feedback for both components will be provided in Week 8.

Course Learning Outcomes

- CLO1 : Describe the physical forces that drive coastal and oceanic processes and explain how they relate to flow regimes over different temporal and spatial scales.
- CLO2 : Describe the chemical properties of seawater and explain the consequences for ocean acidification of the build-up of carbon dioxide in the atmosphere.
- CLO3 : Analyse the major drivers of evolution of marine organisms and how the major taxonomic groups of marine organisms differ.
- CLO4 : Communicate discipline specific information to non-expert scientific audiences.

Detailed Assessment Description

Students are required to present a three-minute research seminar with two minutes for questions and answers. The seminar is based on a previously published marine science study. In week 1 students will choose a published research paper to review. This task aims to expose you to a research paper from the scientific literature that is related to the lecture material you are receiving in class and to give you the opportunity to refine your scientific communication skills.

Students will record a 3-minute video describing the paper and its findings. The video can visualise the paper in whatever you like (e.g. as a cartoon, graphically) but your review of the paper must be spoken. The aim is to translate the paper into plain English and communicate science to a non-science audience. Seminars will be due in week five. In weeks 7-9, we will view the seminars and each student will peer review three videos from other students. This assessement is worth 20 marks: Your video will be marked out of 10, and the quality of your peer-reviews of other students seminars will be worth 10 marks.

In week 2, you will learn how to construct 3-Minute thesis talks, get in-person examples from current marine PhD students, and learn appropriate techniques for peer-reviewing other students seminars.

Assessment Length

3-Minutes

Submission notes

Recorded and uploaded to Moodle - Instructions on Course webpage

Assignment submission Turnitin type

This is not a Turnitin assignment

Field trip report

Assessment Overview

You will attend a field trip to Smith's Lake in flex week (week 6). After completion of the field trip project, you must write an individual report in the format of a scientific paper (approximate length of 4 to 6 pages), communicating the data collected by your group during the project. This will take place under examination conditions with a 2 hour time limit, during Week 6. Feedback will be provided in the form of written reports and class discussion at the end of Week 7.

Course Learning Outcomes

- CLO1 : Describe the physical forces that drive coastal and oceanic processes and explain how they relate to flow regimes over different temporal and spatial scales.
- CLO2 : Describe the chemical properties of seawater and explain the consequences for ocean acidification of the build-up of carbon dioxide in the atmosphere.
- CLO3 : Analyse the major drivers of evolution of marine organisms and how the major taxonomic groups of marine organisms differ.
- CLO5 : Communicate discipline specific information and scientific results in a written form with appropriate referencing.

Detailed Assessment Description

In week one of the course you will select a field trip project to research. Each project will contain 6-8 students. You will be given a starting list of literature on your topic. You will read these and find additional research papers on the topic. Each student will read at least 15 papers. You will compile a reference list of the literature you have read and you will bring it with you to the field trip in week 6. A tutorial will be held with your group and group leader in week 4 to discuss the literature, your project and data collection to be completed at the field trip. In week 6 you will attend a field trip to Smith's Lake to complete the field work for your research project. After completion of the field trip project, you must write an individual report in the format of a scientic paper (approximate length of 4 to 6 pages), communicating the data collected by your group during the project. This will take place under examination conditions with a 2 hour time limit on the last day of the fieldtrip. You may compile notes on your papers that you can have with you when you write your report (notes will not be submitted with your report). After the exam you will hand your report and your reference list to your project leader. Your reference list will be formatted as per instructions on the course Moodle page - DO NOT USE ANY FORMATTING OTHER THAN THAT PROVIDED UNDER THE INSTRUCTIONS FOR WRITING YOUR REPORTS. Feedback will be provided in the form of written reports and class discussion at the end of Week 7.

Assessment Length

4-6 pages

Submission notes

Hand written only

Assignment submission Turnitin type

This is not a Turnitin assignment

Final Exam

Assessment Overview

You will complete a final exam that covers the lecture material from weeks 1-10. The exam includes both multiple choice and questions requiring short answers. The exam is typically 2 hours long and is conducted in the end of term exam period. Feedback on the exam is available via inquiry with the convenor.

Course Learning Outcomes

- CLO1 : Describe the physical forces that drive coastal and oceanic processes and explain

how they relate to flow regimes over different temporal and spatial scales.
- CLO2 : Describe the chemical properties of seawater and explain the consequences for ocean acidification of the build-up of carbon dioxide in the atmosphere.
- CLO3 : Analyse the major drivers of evolution of marine organisms and how the major taxonomic groups of marine organisms differ.

Detailed Assessment Description

The exam will be hand written under supervised condition on campus.The exam consists of five sections with a total number of. In the first section you will answer all nine mulitple choice questions drawn from all the lecture material. In sections 2-4 students answer 3 of 4 short answers for each section. Section 2 will cover the lecture material from the Marine Chemistry Lectures, Section 3 cover the lecture material for the Marine Biology, Marine Micrology and Disease and Marine Biodiversity lectures. Section 4 cover the lecture material from the Physical and Biological Oceanography lectures. For section 5, students will answer four of seven short answer questions drawn from all lecture material provided after the week 6 break. In total you will answer 13 short answer questions each worth 7 marks.

Assessment Length

9 multiple Choice and 13 short answer questions

Assignment submission Turnitin type

This is not a Turnitin assignment

General Assessment Information

Grading Basis

Standard

Requirements to pass course

To pass the course students must reach a composite mark of 50%.

Course Schedule

Teaching Week/Module	Activity Type	Content
Week 1 : 12 February - 18 February	Lecture	Course introductory lecture, and lectures on marine biodiversity
	Seminar	Tutorial on how to read and write scientific papers, field project introduction
Week 2 : 19 February - 25 February	Lecture	Lectures on Marine Biology and Marine Chemistry
	Seminar	Tutorial of how to construct a 3-min thesis talk and examples for PhD students
Week 3 : 26 February - 3 March	Lecture	Lectures on marine chemistry and physical oceanography
	Seminar	Group field course project discussions
Week 4 : 4 March - 10 March	Lecture	Physical oceanography and biological ocenaography lectures
	Seminar	Rocky shore bio-blitz and Clovelly
Week 5 : 11 March - 17 March	Lecture	Lectures of marine microbial ecology, disease and climate change
	Seminar	Preparation for field-course; marine researcher talks
	Assessment	3-Minute thesis seminars due
Week 6 : 18 March - 24 March	Fieldwork	Field-trip to Smiths Lake 20 to 23nd March
	Assessment	Fieldtrip project report due at the end of the fieldtrip
Week 7 : 25 March - 31 March	Lecture	Lectures on marine plastics, marine invasions and restoration
	Seminar	Viewing and peer review of student seminars
Week 8 : 1 April - 7 April	Lecture	Lectures on marine restoration
	Seminar	Viewing and peer review of student seminars
Week 9 : 8 April - 14 April	Lecture	Lectures on pollution, ecological engineering and fish demography
	Seminar	Viewing and peer review of student seminars
Week 10 : 15 April - 21 April	Lecture	Lectures on fish demography, fisheries and aquaculture
	Seminar	Exam preparation

Attendance Requirements

Attendance at the Fieldtrip and weekly Wednesday 2 hr seminars is compulsory.

Course Resources

Prescribed Resources

There are no prescribed resources for students

Recommended Resources

Recommended resources and references for information sourced for each lecture will be provided with each lecture.

Additional Costs

The fieldtrip will incur an additional cost of $160 per student.

Course Evaluation and Development

Student feedback for the course will be gathered formally via MyExperience and informally through discussions throughout the course with students. Student feedback is important and helps build a better course experience for students. For example, students in the past expressed an interest in more hands-on biodiversity experience so we introduced the bio-blitz to the course. In another example, students wanted more guidance in how to prepare assessment items so we added tutorials on 3-minute thesis development and how to read and write research papers.

Staff Details

Position	Name	Email	Location	Phone	Availability	Equitable Learning Services Contact	Primary Contact
Convenor	Paul Gribben		Building E26 Rm 4115	9385 2677	Tuesdays and by email	No	Yes
Demonstrator	Dana Lancem an		Building E26 Level 4		by email	No	No
Lab staff	Rochelle Johnson				By email and Moodle	No	No

Other Useful Information

Academic Information

Upon your enrolment at UNSW, you share responsibility with us for maintaining a safe, harmonious and tolerant University environment.

You are required to:

- Comply with the University's conditions of enrolment.
- Act responsibly, ethically, safely and with integrity.
- Observe standards of equity and respect in dealing with every member of the UNSW community.
- Engage in lawful behaviour.
- Use and care for University resources in a responsible and appropriate manner.
- Maintain the University's reputation and good standing.

For more information, visit the UNSW Student Code of Conduct Website.

Academic Honesty and Plagarism

Referencing is a way of acknowledging the sources of information that you use to research your

assignments. You need to provide a reference whenever you draw on someone else's words, ideas or research. Not referencing other people's work can constitute plagiarism.
Further information about referencing styles can be located at https://student.unsw.edu.au/referencing

Academic integrity is fundamental to success at university. Academic integrity can be defined as a commitment to six fundamental values in academic pursuits: honesty, trust, fairness, respect, responsibility and courage. At UNSW, this means that your work must be your own, and others' ideas should be appropriately acknowledged. If you don't follow these rules, plagiarism may be detected in your work.
Further information about academic integrity, plagiarism and the use of AI in assessments can be located at:

- The Current Students site,
- The ELISE training site, and
- The Use of AI for assessments site.

The Student Conduct and Integrity Unit provides further resources to assist you to understand your conduct obligations as a student: https://student.unsw.edu.au/conduct

Submission of Assessment Tasks

Penalty for Late Submissions

UNSW has a standard late submission penalty of:

- 5% per day,
- for all assessments where a penalty applies,
- capped at five days (120 hours) from the assessment deadline, after which a student cannot submit an assessment, and
- no permitted variation.

Any variations to the above will be explicitly stated in the Course Outline for a given course or assessment task.

Students are expected to manage their time to meet deadlines and to request extensions as early as possible before the deadline.

Special Consideration

If circumstances prevent you from attending/completing an assessment task, you must officially apply for special consideration, usually within 3 days of the sitting date/due date. You can apply

by logging onto myUNSW and following the link in the My Student Profile Tab. Medical documentation or other documentation explaining your absence must be submitted with your application. Once your application has been assessed, you will be contacted via your student email address to be advised of the official outcome and any actions that need to be taken from there. For more information about special consideration, please visit: https://student.unsw.edu.au/special-consideration

Important note: UNSW has a "fit to sit/submit" rule, which means that if you sit an exam or submit a piece of assessment, you are declaring yourself fit to do so and cannot later apply for Special Consideration. This is to ensure that if you feel unwell or are faced with significant circumstances beyond your control that affect your ability to study, you do not sit an examination or submit an assessment that does not reflect your best performance. Instead, you should apply for Special Consideration as soon as you realise you are not well enough or are otherwise unable to sit or submit an assessment.

Faculty-specific Information

Additional support for students

- The Current Students Gateway
- Student Support
- Academic Skills and Support
- Student Wellbeing, Health and Safety
- Equitable Learning Services
- UNSW IT Service Centre
- Science EDI Student Initiatives, Offerings and Guidelines