



UNSW Course Outline

MSCI6681 Topics in Australian Marine Science - 2024

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General Course Information

Course Code : MSCI6681

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 : Multimodal

Delivery Format : Standard

Delivery Location : See School

Campus : Sydney

Study Level : Postgraduate, Undergraduate

Units of Credit : 6

Useful Links

[Handbook Class Timetable](#)

Course Details & Outcomes

Course Description

This Unit of Study will introduce students to current research undertaken in various disciplines of marine science in Australia. This unit is co-taught at the Sydney Institute of Marine Science (SIMS) with contributions from the University of Sydney. Lectures and tutorials will be taught by

leading marine science researchers. Topics will cover physical and biological oceanography, climate change, molecular ecology, aquaculture, marine biology and marine geosciences. In practical classes, students will analyse and interpret temperature, salinity, plankton, remote-sensed, and acoustic telemetry data from the Integrated Marine Observing System ([IMOS](#)), which provides comprehensive information on the biological and physical processes of Australia's coastal and oceanic waters. For example, visit the [OceanCurrent portal](#) for recent events

Notes:

- Students are required to attend the course at SIMS (Chowder Bay Road, Mosman) meeting once per week throughout Term 1. This is a data intensive course.
- Assumed knowledge for this course is a practical, working knowledge of statistical analysis at undergraduate level using R, including t-test and ANOVA, GLM regression, residuals analysis, multivariate analysis other general data analysis and manipulation using Excel spreadsheets.

Course Aims

The aims of this course are to:

1. Introduce students to contemporary concepts in Australian marine science;
2. Introduce numerical and statistical tools in modern marine science, including using online information resources of the Integrated Marine Observing System (IMOS);
3. Apply knowledge and practical tools to understand changes in dynamic marine ecosystems.

Relationship to Other Courses

MSCI6681 is the capstone course in the Masters of Marine Science & Management (MMSM), Program 6681. This course complements the 3 core courses MSCI5005, MSCI5004 and MSCI9001

Course Learning Outcomes

Course Learning Outcomes
CL01 : Describe contemporary issues in Australian marine science and management.
CL02 : Employ statistical and graphical methods to interpret processes that underpin the oceanographic environment of marine ecosystems.
CL03 : Analyse, interpret and communicate data generated from remote marine observing instrumentation.
CL04 : Reveal trends in the marine environment and draw conclusions on the consequences for ecosystem services.
CL05 : Contextualise research findings through a review and critique of the scientific literature.

Course Learning Outcomes	Assessment Item
CLO1 : Describe contemporary issues in Australian marine science and management.	• Final Exam
CLO2 : Employ statistical and graphical methods to interpret processes that underpin the oceanographic environment of marine ecosystems.	• Practical Analytical Modules
CLO3 : Analyse, interpret and communicate data generated from remote marine observing instrumentation.	• Practical Analytical Modules
CLO4 : Reveal trends in the marine environment and draw conclusions on the consequences for ecosystem services.	• Practical Analytical Modules
CLO5 : Contextualise research findings through a review and critique of the scientific literature.	• Final Exam

Learning and Teaching Technologies

Zoom | Moodle - Learning Management System

Learning and Teaching in this course

Graduates of the Master's degree will have advanced and integrated understanding of complex marine science knowledge and management practice. They will be able to analyse critically, reflect on and synthesise complex marine science information, problems, concepts and theories. They will have developed research skills and be able to interpret and transmit knowledge, skills and ideas relating to marine science and management problems to specialist and non-specialist audiences.

Additional Course Information

This course will introduce students to quantitative marine research undertaken in various disciplines of marine science in Australia. This is a numerically intensive course, requiring some basic skills with Excel, R, and Matlab or python. The course is taught on-site at the Sydney Institute of Marine Science (SIMS) at Chowder Bay, Mosman; although on-line teaching is also provided. Lectures and tutorials will be taught by leading marine science researchers. Topics will cover physical and biological oceanography, climate change, molecular ecology, aquaculture, marine biology and marine geosciences. In practical classes, students will analyse and interpret remote-sensing data from the Integrated Marine Observing System (IMOS), which provides comprehensive information on the biological and physical processes of Australia's coastal and oceanic waters.

For an optimal learning experience, students are encouraged to attend the course at the Sydney Institute of Marine Science throughout semester.

Assessments

Assessment Structure

Assessment Item	Weight	Relevant Dates
Practical Analytical Modules Assessment Format: Individual	60%	
Final Exam Assessment Format: Individual	40%	

Assessment Details

Practical Analytical Modules

Assessment Overview

There are five (5) practical analytical modules with your assessment mark being based on homework from the practicals that you undertake at SIMS or online. The practicals are run as a series of modules on different topics in marine science, but based around data from the Integrated Marine Observing System (IMOS). Each module is taught over 2-3 weeks.

The homework consists of a series of short answer questions based on the work done in the module and is due 1 week after the module finishes. We aim to provide feedback 1 week after you have handed in the homework. Feedback includes the correct answers to the questions as well as comments on your work if necessary. Each module is taught and marked by a different expert in that area of Marine Science. If you require any additional feedback you are able to contact the appropriate academic.

Modules are delivered across either 2 or 3 weeks practical sessions, with a 10% weighting for each module run over 2 practical sessions, and a 20% weighting allocated to the module which runs over 3 practical sessions.

Course Learning Outcomes

- CL02 : Employ statistical and graphical methods to interpret processes that underpin the oceanographic environment of marine ecosystems.
- CL03 : Analyse, interpret and communicate data generated from remote marine observing instrumentation.
- CL04 : Reveal trends in the marine environment and draw conclusions on the consequences for ecosystem services.

Final Exam

Assessment Overview

You will take the final test at SIMS, Mosman, or online . The final exam is based on the content taught in the practicals and lectures. The first section contains multiple choice questions and short answers questions on the lectures. The second section contains five longer interpretation question based on the content of the Practical analytical modules. You will have 2 hours to complete the final exam and feedback is available through inquiry with the course convenor.

Course Learning Outcomes

- CL01 : Describe contemporary issues in Australian marine science and management.
- CL05 : Contextualise research findings through a review and critique of the scientific literature.

General Assessment Information

There are five (5) practical analytical modules. Assessment mark is based on homework from the practicals that you undertake at SIMS, Mosman or online. The practicals are run as a series of modules on different topics in marine science, but based around data from the Integrated Marine Observing System (IMOS). Each module is taught over 2-3 weeks.

The homework consists of a series of short answer questions based on the work done in the module and is due 1 week after the module finishes. We aim to provide feedback 1 week after you have handed in the homework. Feedback includes the correct answers to the questions as well as comments on your work if necessary. Each module is taught and marked by a different expert in that area of Marine Science. If you require any additional feedback you are able to contact the appropriate academic.

Homework for four of the modules was each worth 10% and these modules were each run over 2 practical sessions, the physical oceanography module was run over 3 practical sessions and was worth 20% (totalling 60% for all the homework).

Grading Basis

Standard

Requirements to pass course

Achieve a composite mark of at least 50 out of 100.

Course Schedule

Teaching Week/Module	Activity Type	Content
Week 11 : 22 April - 28 April	Module	Course is co-taught with Sydney University which operates on semesters
Week 12 : 29 April - 5 May	Module	Course is co-taught with Sydney University which operates on semesters

Attendance Requirements

Students are strongly encouraged to attend all classes and review lecture recordings.

General Schedule Information

MSCI6681 (Topics in Australian Marine Science, TAMS) is scheduled at the Sydney Institute of Marine Science, usually on Thursdays, from Week 3 of T1 to Week 12

Course is co-taught with Sydney University which operates on semesters, so the extension to including Week 12 is necessary

Course Resources

Prescribed Resources

Integrated Marine Observing System –

•<http://www.imos.org.au/>

<http://oceancurrent.imos.org.au/>

Staff Details

Position	Name	Email	Location	Phone	Availability	Equitable Learning Services Contact	Primary Contact
	Moninya Roughan					No	Yes

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 Plagiarism

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](#)