



# BIOL877

## Topics in Australian Marine Science

S1 Day 2018

*Dept of Biological Sciences*

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#### **Disclaimer**

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## General Information

### Unit convenor and teaching staff

Convenor

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SIMS

Credit points

4

Prerequisites

Admission to MMarScMgt or MConsBiol or GradDipConsBiol or MPlan or MSc

Corequisites

Co-badged status

Unit description

This unit introduces students to current research undertaken in various disciplines of marine science in Australia. It is a multi-institutional unit taught at the Sydney Institute of Marine Science (SIMS) with contributions from the four university partners of SIMS. Lectures and tutorials are taught by leading marine science researchers. Topics cover physical and biological oceanography, climate change, molecular ecology, aquaculture, marine biology and marine geosciences. In practical classes, students analyse and interpret remote-sensing data from the Integrated Marine Observing System, which provides comprehensive information on the biological and physical processes of Australia's coastal and oceanic waters.

## Important Academic Dates

Information about important academic dates including deadlines for withdrawing from units are available at <https://www.mq.edu.au/study/calendar-of-dates>

## Learning Outcomes

On successful completion of this unit, you will be able to:

Understanding of the diversity of IMOS data and instrumentation for data collection. The IMOS national facility is collecting comprehensive biological data as well as complex physical and oceanographic data that give a real picture of the coast. By being exposed to the full range of IMOS data you will learn about the different instrumentation (ocean gliders, national mooring network, acoustic arrays, autonomous underwater vehicles) that is used to measure marine systems.

Formulating and testing hypotheses. IMOS data is being used by researchers to answer important questions such as ocean and climate change and variability, major boundary currents, continental shelf processes and biological responses. You will be able to formulate your own hypotheses associated with these topics and decide on how much data is 'needed' to test it.

Accessing and managing data. The internet has made it possible to access large amounts of data covering extensive spatial scales. New skills are needed to access and manage those large data sets. You will learn how to access and manage large datasets using online tools and other software.

Analysing large data sets. You will develop skills to analyse large data sets that are specific for the marine environment using a variety of software programs and tools specifically developed for the course.

Presenting and visualising data. You will learn how to effectively communicate your results through writing a scientific report on your findings.

## General Assessment Information

### ASSESSMENT DETAILS

Details of assessments will be provided in class, on iLearn (Macquarie University's online unit management system) and/or through the TAMS Moodle.

### ASSESSMENT SUBMISSION

Digital copies of all assessments will be required. Assessments will be run through Turnitin. As assessments need to be written in the student's own words.

### ACADEMIC HONESTY

Plagiarism is the presentation of thoughts and work of another as one's own.

Examples include:

- Copying thoughts or work of another without appropriate acknowledgement
- Paraphrasing another person's work with very minor changes
- Piecing together sections of the work of others into a new document.

All assessments need to be written in the student's own words. The penalties imposed by the University for plagiarism are serious and may include expulsion from the University. ANY evidence of plagiarism will be dealt with following University policy. Penalties for plagiarism will be imposed for each assessment and clearly defined in marking grades. Further penalties imposed by the Faculty disciplinary committee may range from a loss of all marks and the award of zero depending on the circumstances.

## EXTENSIONS, PENALTIES AND DISRUPTION TO STUDIES

The deadlines for assignments are not negotiable. If an assignment is submitted late a penalty of -5% of the mark allocated for the assignment will be deducted per day (i.e. 6 days late = -30% of marks available). Submission must occur within one week (7 days) of the due date or the assignment will not be marked.

Students absent from more than one practical class without approval will be penalised 5% of their overall unit grade for every class missed.

If you experience a serious and unavoidable disruption to your studies and require an extension for an assessment please submit a Disruptions to Studies notification via [ask.mq.edu.au](mailto:ask.mq.edu.au) with supporting documentation, and a Professional Authority Form completed by your health care professional. If you anticipate a potentially serious and unavoidable disruption (e.g., upcoming surgery) speak to the unit staff early and apply for an extension before the due date.

## UNIT COMPLETION

To pass this unit you must achieve an overall minimum grade of 50%.

## SUPPLEMENTARY EXAMS

If you receive special consideration for the final exam, a supplementary exam will be scheduled in the interval between the regular exam period and the start of the next session. By making a special consideration application for the final exam you are declaring yourself available for a resit during the supplementary examination period and will not be eligible for a second special consideration approval based on pre-existing commitments. Please ensure you are familiar with the policy prior to submitting an application. You can check the supplementary examination information page on FSE101 in iLearn ([bit.ly/FSESupp](https://bit.ly/FSESupp)) for dates, and approved applicants will receive an individual notification one week prior to the exam with the exact date and time of their supplementary examination.

## Assessment Tasks

Name	Weighting	Hurdle	Due
<a href="#">Practical exercises in class</a>	30%	No	Weekly
<a href="#">Written assignment</a>	20%	No	Week 10
<a href="#">Exam</a>	50%	No	TBA

### Practical exercises in class

Due: **Weekly**

Weighting: **30%**

You are required to hand in the results of your exercises as an electronic report before the beginning of the practical class the week following the module's conclusion, or as instructed by the lecturer. Results include graphs and figures that you have produced as well as short answers to the questions listed in each practical session. Each practical module is worth 2.5%. Note some of the modules may be assessed over two weeks so they will be worth 5%. The results of the IMOS practical (Week 1) are not assessed.

On successful completion you will be able to:

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## Written assignment

Due: **Week 10**

Weighting: **20%**

You will complete a 1500 word written assignment, the outline of which will be available online early in the session. The assignment is due before the practical class in Week 10.

On successful completion you will be able to:

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## Exam

Due: **TBA**

Weighting: **50%**

You will sit a closed book examination at the end of the unit. The exam format will be six short answer questions addressing the practical modules you have worked on during the semester.

On successful completion you will be able to:

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## **Delivery and Resources**

### STUDY COMMITMENT

All classes in BIOL877 are held on Thursdays at the Sydney Institute of Marine Science (SIMS)

### SEMINARS

A seminar series is built around current research questions in Australian marine science. Scientists from a number of disciplines will showcase their research and the most important research questions in their field in a one-hour weekly seminar.

Seminars take place weekly from 1.15pm to 2.15pm at SIMS.

## PRACTICAL CLASSES

The practicals will introduce you to Australia's Integrated Marine Observing System (IMOS), a national infrastructure facility that collects oceanographic data from Australia's coasts and oceans. These data are made publicly available and used by scientists to explore and monitor biological and oceanographic processes in coastal and offshore marine environments.

Practical classes usually consist of a one-hour tutorial followed by a two-hour hands-on practical. They run weekly from 9.30am to 12.30pm at SIMS.

## UNIT WEBSITE

The unit web page can be accessed via the student portal (log in at <https://iLearn.mq.edu.au/login/MQ/>). There you will find unit information, resource material, announcements, forums and dialogue facilities. You are encouraged to use the discussion and email facilities for communication amongst your fellow MQ students and the MQ unit convenor. Please check the unit website regularly for any announcements and additional resource material.

BIOL877 is unusual in that delivery of the unit spans four Universities. Because of this, you will also receive information through the TAMS Moodle, which will be explained to you by the Unit staff on the first day.

Lectures and information in the Practical classes will be recorded, although it is expected that you attend in person unless a prior arrangement has been made.

## TECHNOLOGY USED AND REQUIRED

Students are expected to access all unit material through the iLearn and Moodle websites. Basic multimedia software (e.g., Windows Media Player, Quicktime) will be needed to listen to recorded lectures. Students will be required to use internet resources for sourcing information and to use the appropriate software.

As we are working with large freely available datasets, the practicals will all be computer-based. You are encouraged to bring your own laptop if you have one as it will be easier to continue your work at home from where you left off in class. We will be providing you with some software for use in some classes but in others, the work will be web-based or via electronic spreadsheets.

Before coming to class please do the following:

- Ensure you are running up-to-date software with all security patches installed
- Have either Mozilla Firefox or Google Chrome installed, in addition to your default web browser. These browsers are more compatible with our software.
- Install Microsoft Excel and some form of a word processor (e.g., Microsoft Word). There are student versions of these available, and there are also some free alternatives.
- Have your computer language and keyboard set to English for any practicals conducted in R.



## SOFTWARE INSTALLATION

Throughout this unit you will be required to install a variety of software. The software is provided for you but you will be required to install the software BEFORE the relevant class. Please try to install the software in the first week or two of classes so we can address any issues well in advance. The unit coordinator will be available to assist with software installation from 8.30am each Thursday morning at SIMS.

Further information about software installation will be provided in a separate handout.

## ASSUMED KNOWLEDGE

This unit is data-intensive. You will be downloading, manipulating and analysing datasets with many thousands of observations. As a result, you need to be proficient in the use of Microsoft Excel and basic statistics. Please check the assumed knowledge section of the iLearn website prior to the practicals for online tutorials covering these topics.

## WIRELESS ACCESS AT SIMS

A special wireless network has been set up for TAMS at the Sydney Institute of Marine Science.

SSID: TAMS

Password: tams2018

## Unit Schedule

<u>2018 Topics in Australian Marine Science (TAMS) Course Schedule</u>				
Semester week	Date	Tutorials/Practical (9:30am – 12:30pm)	Lunch	Seminars (1:15 – 2:15 pm)
1	1-Mar-18	1. Welcome (Peter); 2. Course Overview/Expectations/ Computing (Kate); 3. Introduction to the AODN Ocean Portal (AODN: Marty Hidas)	Welcome lunch	Marine Microbes around Australia (Justin Seymour)
2	8-Mar-18	Introduction to R prac (Kate Lee)		World Harbour Project (Edwina Tanner)
3	15-Mar-18	Physical Oceanography - Moorings (Matt Archer)	SIMS Lab Tour	Moorings (Matt Archer)
4	22-Mar-18	Physical Oceanography - Radar (Matt Archer)	DPI Age and Growth	Fisheries Research and Management (John Stewart and Doug Ferrell)

5	29-Mar-18	Introduction to R prac 2 (Kate Lee)		Numerical modelling of surface processes in coastal environments (Tristan Salles)
6	5-Apr-18	Physical Oceanography - Gliders (Matt Archer)		Lagrangian Processes (Paulina Cetina-Heredia)
7	12-Apr-18	Physical Oceanography - Argos and Drifters (Paulina Cetina-Heredia)		Biological Oceanography (Iain Suthers)
<b>Mid-semester break : 13 to 23 Apr</b>				
8	26-Apr-18	Zooplankton Ecology (Jason Everett)		Animal Tracking (Kate Lee)
9	3-May-18	Zooplankton Ecology (Jason Everett)	SIMS Visitors Centre	Using Lagrangian processes to understand recruitment into NSW lobster fishery (Geoff Liggins)
10	10-May-18	Animal Tracking (Kate Lee and Fabrice Jaïne)		IMOS animal tracking facility (Fabrice Jaïne)
11	17-May-18	Animal Tracking (Kate Lee and Fabrice Jaïne)		Shark Ecology (Vic Peddemors)
12	24-May-18	Autonomous Underwater Vehicles (Ziggy Marzinelli)		Benthic Ecology (Ziggy Marzinelli)
13	31-May-18	Autonomous Underwater Vehicles (Ziggy Marzinelli)		Geocoastal Research (Eleanor Bruce/ Ana Vila-Concejo)
14	7-Jun-18	EXAM	BBQ	BBQ

## Policies and Procedures

Macquarie University policies and procedures are accessible from [Policy Central \(https://staff.mq.edu.au/work/strategy-planning-and-governance/university-policies-and-procedures/policy-central\)](https://staff.mq.edu.au/work/strategy-planning-and-governance/university-policies-and-procedures/policy-central). Students should be aware of the following policies in particular with regard to Learning and Teaching:

- [Academic Appeals Policy](#)
- [Academic Integrity Policy](#)
- [Academic Progression Policy](#)
- [Assessment Policy](#)
- [Fitness to Practice Procedure](#)
- [Grade Appeal Policy](#)
- [Complaint Management Procedure for Students and Members of the Public](#)

- [Special Consideration Policy](#) (**Note:** *The Special Consideration Policy is effective from 4 December 2017 and replaces the Disruption to Studies Policy.*)

Undergraduate students seeking more policy resources can visit the [Student Policy Gateway](https://students.mq.edu.au/support/study/student-policy-gateway) (<https://students.mq.edu.au/support/study/student-policy-gateway>). It is your one-stop-shop for the key policies you need to know about throughout your undergraduate student journey.

If you would like to see all the policies relevant to Learning and Teaching visit [Policy Central](http://staff.mq.edu.au/work/strategy-planning-and-governance/university-policies-and-procedures/policy-central) (<http://staff.mq.edu.au/work/strategy-planning-and-governance/university-policies-and-procedures/policy-central>).

## Student Code of Conduct

Macquarie University students have a responsibility to be familiar with the Student Code of Conduct: <https://students.mq.edu.au/study/getting-started/student-conduct>

## Results

Results shown in *iLearn*, or released directly by your Unit Convenor, are not confirmed as they are subject to final approval by the University. Once approved, final results will be sent to your student email address and will be made available in [eStudent](#). For more information visit [ask.mq.edu.au](http://ask.mq.edu.au).

## Student Support

Macquarie University provides a range of support services for students. For details, visit <http://students.mq.edu.au/support/>

## Learning Skills

Learning Skills ([mq.edu.au/learningskills](http://mq.edu.au/learningskills)) provides academic writing resources and study strategies to improve your marks and take control of your study.

- [Workshops](#)
- [StudyWise](#)
- [Academic Integrity Module for Students](#)
- [Ask a Learning Adviser](#)

## Student Services and Support

Students with a disability are encouraged to contact the [Disability Service](#) who can provide appropriate help with any issues that arise during their studies.

## Student Enquiries

For all student enquiries, visit Student Connect at [ask.mq.edu.au](http://ask.mq.edu.au)

## IT Help

For help with University computer systems and technology, visit [http://www.mq.edu.au/about\\_us/offices\\_and\\_units/information\\_technology/help/](http://www.mq.edu.au/about_us/offices_and_units/information_technology/help/).

When using the University's IT, you must adhere to the [Acceptable Use of IT Resources Policy](#). The policy applies to all who connect to the MQ network including students.

## Graduate Capabilities

### PG - Capable of Professional and Personal Judgment and Initiative

Our postgraduates will demonstrate a high standard of discernment and common sense in their professional and personal judgment. They will have the ability to make informed choices and decisions that reflect both the nature of their professional work and their personal perspectives.

This graduate capability is supported by:

#### Learning outcomes

- Understanding of the diversity of IMOS data and instrumentation for data collection. The IMOS national facility is collecting comprehensive biological data as well as complex physical and oceanographic data that give a real picture of the coast. By being exposed to the full range of IMOS data you will learn about the different instrumentation (ocean gliders, national mooring network, acoustic arrays, autonomous underwater vehicles) that is used to measure marine systems.
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#### Assessment tasks

- Practical exercises in class
- Written assignment
- Exam

## PG - Discipline Knowledge and Skills

Our postgraduates will be able to demonstrate a significantly enhanced depth and breadth of knowledge, scholarly understanding, and specific subject content knowledge in their chosen fields.

This graduate capability is supported by:

### Learning outcomes

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## PG - Critical, Analytical and Integrative Thinking

Our postgraduates will be capable of utilising and reflecting on prior knowledge and experience, of applying higher level critical thinking skills, and of integrating and synthesising learning and knowledge from a range of sources and environments. A characteristic of this form of thinking is

the generation of new, professionally oriented knowledge through personal or group-based critique of practice and theory.

This graduate capability is supported by:

## **Learning outcomes**

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## **PG - Research and Problem Solving Capability**

Our postgraduates will be capable of systematic enquiry; able to use research skills to create new knowledge that can be applied to real world issues, or contribute to a field of study or practice to enhance society. They will be capable of creative questioning, problem finding and problem solving.

This graduate capability is supported by:

## Learning outcomes

- Understanding of the diversity of IMOS data and instrumentation for data collection. The IMOS national facility is collecting comprehensive biological data as well as complex physical and oceanographic data that give a real picture of the coast. By being exposed to the full range of IMOS data you will learn about the different instrumentation (ocean gliders, national mooring network, acoustic arrays, autonomous underwater vehicles) that is used to measure marine systems.
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## PG - Effective Communication

Our postgraduates will be able to communicate effectively and convey their views to different social, cultural, and professional audiences. They will be able to use a variety of technologically supported media to communicate with empathy using a range of written, spoken or visual formats.

This graduate capability is supported by:

## Learning outcomes

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## **PG - Engaged and Responsible, Active and Ethical Citizens**

Our postgraduates will be ethically aware and capable of confident transformative action in relation to their professional responsibilities and the wider community. They will have a sense of connectedness with others and country and have a sense of mutual obligation. They will be able to appreciate the impact of their professional roles for social justice and inclusion related to national and global issues

This graduate capability is supported by:

## **Learning outcomes**

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