EESC2160

Climate and Oceans

Session 2, In person-scheduled-weekday, North Ryde 2023

School of Natural Sciences

Contents

General Information

Unit convenor and teaching staff
Convenor
Neil Saintilan
neil.saintilan@mq.edu.au
Contact via 0409378863
Level 1, 12 Wallys Walk
By appointment

Lecturer
Luke Walker
l.walker3@hdr.mq.edu.au

Credit points
10

Prerequisites
(ENVE117 or ENVS117 or ENVS1017 or GEOS117 or GEOS112 or GEOS1110 or GEOS126 or EESC1160) or 10cp in PHYS units at 1000 level

Corequisites

Co-badged status

Unit description
The Earth's climate and oceans are intimately linked and are fundamental to life on this planet. This unit explores the climate system and the role that oceans play in regulating climate. The unit examines climate and ocean interactions and processes on a range of spatial scales (local to global) and time scales (daily to decadal and millennial). The unit includes a field trip that introduces students to evidence of climate drivers and responses in marine and coastal habitats such as sea-level rise impacts and adaptation.

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:

ULO1: Demonstrate an understanding of the fundamental links between the climate and oceans to interpret climate-ocean interactions and processes.

ULO2: Apply data collected from measuring and modelling climate-ocean interactions to understand mechanisms of climate and ocean variability.

ULO3: Demonstrate effective individual and team work skills in climate-ocean science to understand and solve real-world environmental problems in both the field and laboratory.

ULO4: Draw on and synthesise appropriate sources of information to communicate ideas about climate drivers and responses in marine and coastal habitats.

General Assessment Information

Assessment Criteria

Assessment at Macquarie University is standards-based, as outlined in the Assessment Policy. This means that your work will be assessed against clear criteria, and these criteria (e.g. in a rubric) will be made available when the assessment tasks are released to you on iLearn.

Submission of Assessments

All assessments must be submitted online through Turnitin unless otherwise indicated. Links for the submission of each assessment will be available on iLearn.

You should always check that you have uploaded the correct file. If you have a problem, please email the Unit Convenor with your correct file. You must also keep a copy of your assessments until the end of semester in case there is a problem with your submission. It is your responsibility to ensure that you can provide a copy of your assessment if requested.

Marking of Assessments

Assignments will usually be marked through Turnitin with grades provided through Gradebook on iLearn. Please do not submit your assessments via email or in hard copy unless requested (e.g. a sketch or drawing).

We aim to return your assessment grades and feedback within two to three weeks of the date that you submitted it. We appreciate your patience and will advise you through iLearn when your marked assessments and feedback are available for viewing.

Late Assessment Submission Penalty

From 1 July 2022, Students enrolled in Session based units with written assessments will have the following university standard late penalty applied. Please see https://students.mq.edu.au/study/assessment-exams/assessments for more information.

Unless a Special Consideration request has been submitted and approved, a 5% penalty (of the total possible mark) will be applied each day a written assessment is not submitted, up until the 7th day (including weekends). After the 7th day, a grade of '0' will be awarded even if the assessment is submitted. Submission time for all written assessments is set at **11:55 pm**. A 1-hour grace period is provided to students who experience a technical concern.

For any late submission of time-sensitive tasks, such as scheduled tests/exams, performance assessments/presentations, and/or scheduled practical assessments/labs, students need to submit an application for Special Consideration.

Assessments where Late Submissions will be accepted

In this unit, late submissions will accepted as follows:

- Assessment 1 Practical Report – YES, Standard Late Penalty applies
- Assessment 2 Field Report - YES, Standard Late Penalty applies
- Assessment 3 Quiz - NO, unless Special Consideration is Granted

Special Consideration

The Special Consideration Policy aims to support students who have been impacted by short-term circumstances or events that are serious, unavoidable and significantly disruptive, and which may affect their performance in assessment. If you experience circumstances or events that affect your ability to complete the assessments in this unit on time, please inform the convenor and submit a Special Consideration request through ask.mq.edu.au.

Requirements to Pass this Unit

To pass this unit, you must achieve a total mark equal to or greater than 50%

Assessment Tasks

Name	Weighting	Hurdle	Due
Practical report	20%	No	04/08/2023; 11/08/2023; 25/08/2023; 01/09/2023
Quizzes	30%	No	09/09/2023; 24/10/2023
Fieldtrip report and presentation	50%	No	13/10/2023

Practical report

Assessment Type [1]: Lab report
Indicative Time on Task [2]: 12 hours
Due: **04/08/2023; 11/08/2023; 25/08/2023; 01/09/2023**
Weighting: **20%**

Assessment 2 is a practical report worth 20% of the final grade. The report will include experimental data introduced during practicals that is presented with appropriate graphical representation and statistical analysis, and a conclusion drawing correct associations and inferences from the data. During this assessment task students will develop skills to apply to the fieldtrip report.

On successful completion you will be able to:

- Demonstrate effective individual and team work skills in climate-ocean science to understand and solve real-world environmental problems in both the field and laboratory.
- Draw on and synthesise appropriate sources of information to communicate ideas about climate drivers and responses in marine and coastal habitats.

Quizzes

Assessment Type [1]: Quiz/Test
Indicative Time on Task [2]: 18 hours
Due: **09/09/2023; 24/10/2023**
Weighting: **30%**

Assessment 1 involves two multiple-choice quizzes, each worth 15% of the final grade. Content can be from the lectures, practicals, fieldwork or assigned readings.

On successful completion you will be able to:

- Demonstrate an understanding of the fundamental links between the climate and oceans to interpret climate-ocean interactions and processes.
- Apply data collected from measuring and modelling climate-ocean interactions to understand mechanisms of climate and ocean variability.

Fieldtrip report and presentation

Assessment Type [1]: Field work task
Indicative Time on Task [2]: 30 hours
Due: **13/10/2023**
Weighting: **50%**

Assessment 3 is a fieldtrip report and presentation based on a 2-day local fieldtrip, worth 50% of the final grade. The content of the report will include an Introduction, Methods, Results, Discussion, Acknowledgements and References. This will be translated to a non-scientific audience in group presentations.

On successful completion you will be able to:

- Demonstrate an understanding of the fundamental links between the climate and oceans

to interpret climate-ocean interactions and processes.
- Apply data collected from measuring and modelling climate-ocean interactions to understand mechanisms of climate and ocean variability.
- Demonstrate effective individual and team work skills in climate-ocean science to understand and solve real-world environmental problems in both the field and laboratory.
- Draw on and synthesise appropriate sources of information to communicate ideas about climate drivers and responses in marine and coastal habitats.

---

[1] If you need help with your assignment, please contact:

- the academic teaching staff in your unit for guidance in understanding or completing this type of assessment
- the Writing Centre for academic skills support.

[2] Indicative time-on-task is an estimate of the time required for completion of the assessment task and is subject to individual variation

Delivery and Resources

The Unit consists of a weekly lecture scheduled for 9.00am Tuesdays, in Room 320, 4 Western Road. The lecture is also available in on-line form, uploaded to iLearn on the Friday of the week prior, which can be viewed at a time convenient to the student. The Tuesday morning lecture is therefore an opportunity for you to engage with the lecturer and the material. There will be a weekly 2-hour practical session on campus. Times are: Tuesday 10 am - 12noon, and alternatively Tuesday 1pm-3pm, also in Room 320, 4 Western Road. The excursion will be held on Saturday 2nd September, on the Central Coast, and students will be allocated to either a morning or afternoon group. We will communicate with you via your university email or through announcements on iLearn. Queries to convenors can either be placed on the iLearn discussion board or sent to UNITCODE@mq.edu.au from your university email address.

COVID Information

For the latest information on the University's response to COVID-19, please refer to the Coronavirus infection page on the Macquarie website: https://www.mq.edu.au/about/coronavirus-faqs. Remember to check this page regularly in case the information and requirements change during semester. If there are any changes to this unit in relation to COVID, these will be communicated via iLearn.

Changes to the unit from last offering

This year's offering will place greater emphasis on ocean processes influencing key habitats, with a module on this content presented by Luke Walker. Professor Saintilan's module on climate, ocean and sea-level are as per previous offerings

Unit Schedule

EESC 2160 Climate and Oceans Schedule 2023

Week	Date	Lecturer	Lecture Topic	Practical Topic	Assessment
Module 1: Marine Climate Change					
1	Tuesday 25th July	NS	Introduction- coupled ocean atmosphere system in time	No practical	
2	Tuesday 1st August	NS	Palaeo Sea level and coastal morphodynamics	Practical 1 East Australian sea level trend analysis	***Assessable Prac due Friday 4th August***
3	Tuesday 8th August	NS	Extreme maritime storms	Practical 2 Vertical accretion of intertidal habitats	***Assessable Prac due Friday 11th August***
4	Tuesday 15th August	NS	Marine climate and weather- ENSO and the IOD	Practical 3 Indigenous perspectives in coastal and marine management	
Module 2: Coastal processes and management					
5	Tuesday 22nd August	NS	Estuarine processes	Practical 4 Spatial analysis of habitat change	***Assessable Prac due Friday 25th August***
6	Tuesday 29th August	NS	Blue Carbon	Practical 5 Indonesia case study	***Assessable Prac due Friday 1st September***
	Excursion Saturday 2nd September ***Central Coast***				
7	Tuesday 5th September	LM	Seagrasses	Practical 6 Seagrasses	***1st quiz (15%) Fri 9th September***
Study Break: 11-24 September					
8	Tuesday 26th September	LM	The southern ocean	Practical 7 Ocean facilities	

9	Tuesday 3rd October	LM	Tropicalisation	Practical 8 Managing the Coasts	
10	Tuesday 10th October	NS	Coastal Zone Management	Practical 9 Seminar	***Field Report due*** ***Fri 13th October (30%)***
11	Tuesday 17th October	LW and NS	Field trip group presentations		***In class*** ***presentations (20%)***
12	Tuesday 24th October	No class	Final Quiz		***2nd quiz (15%) Tues 24th*** ***October***
13	***No Class***				

Policies and Procedures

Macquarie University policies and procedures are accessible from Policy Central (https://policies.mq.edu.au). 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
- Assessment Procedure
- Complaints Resolution Procedure for Students and Members of the Public
- Special Consideration Policy

Students seeking more policy resources can visit Student Policies (https://students.mq.edu.au/support/study/policies). It is your one-stop-shop for the key policies you need to know about throughout your undergraduate student journey.

To find other policies relating to Teaching and Learning, visit Policy Central (https://policies.mq.edu.au) and use the search tool.

Student Code of Conduct

Macquarie University students have a responsibility to be familiar with the Student Code of Conduct: https://students.mq.edu.au/admin/other-resources/student-conduct

Results

Results published on platform other than eStudent, (eg. iLearn, Coursera etc.) 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 or if you are a Global MBA student contact globalmba.support@mq.edu.au

Academic Integrity

At Macquarie, we believe academic integrity – honesty, respect, trust, responsibility, fairness and courage – is at the core of learning, teaching and research. We recognise that meeting the expectations required to complete your assessments can be challenging. So, we offer you a range of resources and services to help you reach your potential, including free online writing and maths support, academic skills development and wellbeing consultations.

Student Support

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

The Writing Centre

The Writing Centre provides resources to develop your English language proficiency, academic writing, and communication skills.

- Workshops
- Chat with a WriteWISE peer writing leader
- Access StudyWISE
- Upload an assignment to Studiosity
- Complete the Academic Integrity Module

The Library provides online and face to face support to help you find and use relevant information resources.

- Subject and Research Guides
- Ask a Librarian

Student Services and Support

Macquarie University offers a range of Student Support Services including:

- IT Support
- Accessibility and disability support with study
- Mental health support
- Safety support to respond to bullying, harassment, sexual harassment and sexual assault
- Social support including information about finances, tenancy and legal issues
- Student Advocacy provides independent advice on MQ policies, procedures, and

processes

Student Enquiries

Got a question? Ask us via AskMQ, or contact Service Connect.

IT Help

For help with University computer systems and technology, visit 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.

Changes since First Published

Date	Description
03/10/2023	"Tutorial" removed