



GEOS335

Marine Science Capstone

S2 Day 2017

Dept of Earth and Planetary Sciences

Contents

<u>General Information</u>	2
<u>Learning Outcomes</u>	3
<u>Assessment Tasks</u>	3
<u>Delivery and Resources</u>	7
<u>Unit Schedule</u>	7
<u>Policies and Procedures</u>	7
<u>Graduate Capabilities</u>	9

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General Information

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Credit points

3

Prerequisites

39cp at 100 level or above

Corequisites

6cp from (BIOL373 or GEOS309 or ENVE301 or ENVS301)

Co-badged status

Unit description

In this interdisciplinary capstone unit students consolidate their learning across the biology, earth and environmental science subjects that comprise the Bachelor of Marine Science degree and prepare themselves for appropriate transition to the next stage of their careers. This involves active reflection on prior learning, building and articulating a positive self-understanding, exploring opportunities, clarifying goals, acquiring adequate employability and workplace skills, and building linkages with professional communities and industries. A series of activities including guest speakers will facilitate students' reflection on their studies and desires for their own career paths. The course also covers key topics such as communicating science, the publication and review process, research ethics, and career pathways.

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:

- Evaluate and synthesise data to address questions in marine science
- Design and implement a research plan to address a specific question
- Demonstrate competency in a range of marine science relevant laboratory and field techniques
- Apply teamwork, critical thinking, and research skills to address questions in marine science
- Advocate for the importance of interdisciplinary linkages in understanding the marine environment and processes
- Assess and plan for future careers through the recognition and development of transferable skills
- Practice and reflect on appropriate professional ethics

Assessment Tasks

Name	Weighting	Hurdle	Due
<u>Linkedin Profile</u>	5%	No	Week 2
<u>Pre-registration of project</u>	20%	No	Week4
<u>Field and Laboratory Notebooks</u>	15%	No	TBD
<u>Presentation</u>	15%	No	various

Name	Weighting	Hurdle	Due
<u>Journal</u>	15%	No	Week13
<u>Portfolio or Capstone Project</u>	30%	No	Week 13

Linkedin Profile

Due: **Week 2**

Weighting: **5%**

Each student will newly create or improve an existing LinkedIn profile, which will be discussed in class.

This Assessment Task relates to the following Learning Outcomes:

- Apply teamwork, critical thinking, and research skills to address questions in marine science
- Assess and plan for future careers through the recognition and development of transferable skills
- Practice and reflect on appropriate professional ethics

On successful completion you will be able to:

- Advocate for the importance of interdisciplinary linkages in understanding the marine environment and processes
- Assess and plan for future careers through the recognition and development of transferable skills

Pre-registration of project

Due: **Week4**

Weighting: **20%**

Each student will write a report that outlines the objectives of and the approach to their project. This report should consist of introduction/objectives (approx. one page), methodological approach (approx. one page) and reflection on the anticipated learning outcomes for the development of individual professional skills (approx. one page).

This Assessment Task relates to the following Learning Outcomes:

- Design and implement a research plan to address a specific question
- Apply teamwork, critical thinking, and research skills to address questions in marine science
- Practice and reflect on appropriate professional ethics

On successful completion you will be able to:

- Evaluate and synthesise data to address questions in marine science
- Design and implement a research plan to address a specific question
- Demonstrate competency in a range of marine science relevant laboratory and field techniques
- Apply teamwork, critical thinking, and research skills to address questions in marine science
- Assess and plan for future careers through the recognition and development of transferable skills
- Practice and reflect on appropriate professional ethics

Field and Laboratory Notebooks

Due: **TBD**

Weighting: **15%**

During the required field excursions students will keep a notebook including sketches, weather conditions, and any occurrence that may compromise sample integrity. Field notebooks are due the Monday following field work completion.

Students will keep a laboratory notebook throughout sample analysis including sample preparation, analysis, and participation. Lab notebooks are due the Monday following the completion of lab work.

This Assessment Task relates to the following Learning Outcomes:

- Demonstrate competency in a range of marine science relevant laboratory and field techniques
- Practice and reflect on appropriate professional ethics

On successful completion you will be able to:

- Evaluate and synthesise data to address questions in marine science
- Demonstrate competency in a range of marine science relevant laboratory and field techniques
- Practice and reflect on appropriate professional ethics

Presentation

Due: **various**

Weighting: **15%**

Throughout the term, each student will give one presentation to the class addressing their groups current progress on the major project.

This Assessment Task relates to the following Learning Outcomes:

- Design and implement a research plan to address a specific question
- Apply teamwork, critical thinking, and research skills to address questions in marine science
- Practice and reflect on appropriate professional ethics

On successful completion you will be able to:

- Design and implement a research plan to address a specific question
- Demonstrate competency in a range of marine science relevant laboratory and field techniques
- Apply teamwork, critical thinking, and research skills to address questions in marine science
- Practice and reflect on appropriate professional ethics

Journal

Due: **Week13**

Weighting: **15%**

Students will write a reflection on which skills they see most useful in the transition to their next step (higher degree research, industry, etc). This essay should include a reflection on the anticipation of skills to be acquired during this unit as articulated in the pre-registration report.

This Assessment Task relates to the following Learning Outcomes:

- Apply teamwork, critical thinking, and research skills to address questions in marine science
- Advocate for the importance of interdisciplinary linkages in understanding the marine environment and processes
- Assess and plan for future careers through the recognition and development of transferable skills
- Practice and reflect on appropriate professional ethics

On successful completion you will be able to:

- Advocate for the importance of interdisciplinary linkages in understanding the marine environment and processes
- Assess and plan for future careers through the recognition and development of transferable skills
- Practice and reflect on appropriate professional ethics

Portfolio or Capstone Project

Due: **Week 13**

Weighting: **30%**

Students will report on their project in a format appropriate to the question being investigated (to be agreed on during the first 3 weeks of the term).

This Assessment Task relates to the following Learning Outcomes:

- Evaluate and synthesise data to address questions in marine science
- Apply teamwork, critical thinking, and research skills to address questions in marine science
- Practice and reflect on appropriate professional ethics

On successful completion you will be able to:

- Evaluate and synthesise data to address questions in marine science
- Design and implement a research plan to address a specific question
- Demonstrate competency in a range of marine science relevant laboratory and field techniques
- Apply teamwork, critical thinking, and research skills to address questions in marine science
- Practice and reflect on appropriate professional ethics

Delivery and Resources

There is no text book for this course. All required readings will be provided in print or electronically as pdf files on iLearn. Students should regularly check the iLearn page for announcements, updates, and course resources.

Unit Schedule

See iLearn for detailed schedule

Policies and Procedures

Macquarie University policies and procedures are accessible from [Policy Central](#). Students should be aware of the following policies in particular with regard to Learning and Teaching:

Academic Honesty Policy http://mq.edu.au/policy/docs/academic_honesty/policy.html

Assessment Policy http://mq.edu.au/policy/docs/assessment/policy_2016.html

Grade Appeal Policy <http://mq.edu.au/policy/docs/gradeappeal/policy.html>

Complaint Management Procedure for Students and Members of the Public http://www.mq.edu.au/policy/docs/complaint_management/procedure.html

Disruption to Studies Policy (in effect until Dec 4th, 2017): http://www.mq.edu.au/policy/docs/disruption_studies/policy.html

Special Consideration Policy (in effect from Dec 4th, 2017): <https://staff.mq.edu.au/work/strategy-planning-and-governance/university-policies-and-procedures/policies/special-consideration>

In addition, a number of other policies can be found in the [Learning and Teaching Category](#) of 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/support/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.

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) 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

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.

Graduate Capabilities

Creative and Innovative

Our graduates will also be capable of creative thinking and of creating knowledge. They will be imaginative and open to experience and capable of innovation at work and in the community. We want them to be engaged in applying their critical, creative thinking.

This graduate capability is supported by:

Learning outcome

- Assess and plan for future careers through the recognition and development of transferable skills

Assessment task

- Pre-registration of project

Capable of Professional and Personal Judgement and Initiative

We want our graduates to have emotional intelligence and sound interpersonal skills and to demonstrate discernment and common sense in their professional and personal judgement. They will exercise initiative as needed. They will be capable of risk assessment, and be able to handle ambiguity and complexity, enabling them to be adaptable in diverse and changing environments.

This graduate capability is supported by:

Learning outcomes

- Evaluate and synthesise data to address questions in marine science
- Design and implement a research plan to address a specific question
- Apply teamwork, critical thinking, and research skills to address questions in marine science
- Practice and reflect on appropriate professional ethics

Assessment tasks

- Pre-registration of project
- Field and Laboratory Notebooks
- Journal
- Portfolio or Capstone Project

Commitment to Continuous Learning

Our graduates will have enquiring minds and a literate curiosity which will lead them to pursue knowledge for its own sake. They will continue to pursue learning in their careers and as they participate in the world. They will be capable of reflecting on their experiences and relationships

with others and the environment, learning from them, and growing - personally, professionally and socially.

This graduate capability is supported by:

Learning outcome

- Assess and plan for future careers through the recognition and development of transferable skills

Discipline Specific Knowledge and Skills

Our graduates will take with them the intellectual development, depth and breadth of knowledge, scholarly understanding, and specific subject content in their chosen fields to make them competent and confident in their subject or profession. They will be able to demonstrate, where relevant, professional technical competence and meet professional standards. They will be able to articulate the structure of knowledge of their discipline, be able to adapt discipline-specific knowledge to novel situations, and be able to contribute from their discipline to inter-disciplinary solutions to problems.

This graduate capability is supported by:

Learning outcomes

- Evaluate and synthesise data to address questions in marine science
- Design and implement a research plan to address a specific question
- Demonstrate competency in a range of marine science relevant laboratory and field techniques
- Assess and plan for future careers through the recognition and development of transferable skills

Assessment tasks

- Pre-registration of project
- Field and Laboratory Notebooks
- Presentation
- Journal
- Portfolio or Capstone Project

Critical, Analytical and Integrative Thinking

We want our graduates to be capable of reasoning, questioning and analysing, and to integrate and synthesise learning and knowledge from a range of sources and environments; to be able to critique constraints, assumptions and limitations; to be able to think independently and systemically in relation to scholarly activity, in the workplace, and in the world. We want them to have a level of scientific and information technology literacy.

This graduate capability is supported by:

Learning outcomes

- Evaluate and synthesise data to address questions in marine science
- Design and implement a research plan to address a specific question
- Demonstrate competency in a range of marine science relevant laboratory and field techniques
- Apply teamwork, critical thinking, and research skills to address questions in marine science
- Assess and plan for future careers through the recognition and development of transferable skills

Assessment tasks

- Pre-registration of project
- Presentation
- Journal
- Portfolio or Capstone Project

Problem Solving and Research Capability

Our graduates should be capable of researching; of analysing, and interpreting and assessing data and information in various forms; of drawing connections across fields of knowledge; and they should be able to relate their knowledge to complex situations at work or in the world, in order to diagnose and solve problems. We want them to have the confidence to take the initiative in doing so, within an awareness of their own limitations.

This graduate capability is supported by:

Learning outcomes

- Evaluate and synthesise data to address questions in marine science
- Design and implement a research plan to address a specific question
- Apply teamwork, critical thinking, and research skills to address questions in marine science

Assessment tasks

- Pre-registration of project
- Presentation
- Portfolio or Capstone Project

Effective Communication

We want to develop in our students the ability to communicate and convey their views in forms effective with different audiences. We want our graduates to take with them the capability to

read, listen, question, gather and evaluate information resources in a variety of formats, assess, write clearly, speak effectively, and to use visual communication and communication technologies as appropriate.

This graduate capability is supported by:

Learning outcomes

- Design and implement a research plan to address a specific question
- Demonstrate competency in a range of marine science relevant laboratory and field techniques
- Apply teamwork, critical thinking, and research skills to address questions in marine science
- Advocate for the importance of interdisciplinary linkages in understanding the marine environment and processes
- Assess and plan for future careers through the recognition and development of transferable skills
- Practice and reflect on appropriate professional ethics

Assessment tasks

- LinkedIn Profile
- Pre-registration of project
- Field and Laboratory Notebooks
- Presentation
- Journal
- Portfolio or Capstone Project

Engaged and Ethical Local and Global citizens

As local citizens our graduates will be aware of indigenous perspectives and of the nation's historical context. They will be engaged with the challenges of contemporary society and with knowledge and ideas. We want our graduates to have respect for diversity, to be open-minded, sensitive to others and inclusive, and to be open to other cultures and perspectives: they should have a level of cultural literacy. Our graduates should be aware of disadvantage and social justice, and be willing to participate to help create a wiser and better society.

This graduate capability is supported by:

Learning outcomes

- Demonstrate competency in a range of marine science relevant laboratory and field techniques
- Apply teamwork, critical thinking, and research skills to address questions in marine science

- Advocate for the importance of interdisciplinary linkages in understanding the marine environment and processes
- Practice and reflect on appropriate professional ethics

Assessment task

- Field and Laboratory Notebooks

Socially and Environmentally Active and Responsible

We want our graduates to be aware of and have respect for self and others; to be able to work with others as a leader and a team player; to have a sense of connectedness with others and country; and to have a sense of mutual obligation. Our graduates should be informed and active participants in moving society towards sustainability.

This graduate capability is supported by:

Learning outcomes

- Apply teamwork, critical thinking, and research skills to address questions in marine science
- Advocate for the importance of interdisciplinary linkages in understanding the marine environment and processes
- Practice and reflect on appropriate professional ethics

Assessment task

- Field and Laboratory Notebooks