ENVS700

Research Frontiers in Environmental Sciences

S1 Day 2019

Dept of Environmental Sciences

Contents

General Information	2
Learning Outcomes	2
General Assessment Information	3
Assessment Tasks	3
Delivery and Resources	6
Unit Schedule	6
Policies and Procedures	7
Graduate Capabilities	9

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General Information

Unit convenor and teaching staff Senior Lecturer, Convenor Emilie Ens emilie.ens@mq.edu.au Senior Lecturer Tim Ralph tim.ralph@mq.edu.au Professor Mark Taylor mark.taylor@mq.edu.au
Credit points 4
Prerequisites Admission to MRes
Corequisites
Co-badged status
Unit description This unit will engage students with cutting-edge approaches to research in environmental sciences. Current research outlooks, big questions, strategies, and project design and management techniques will be addressed, providing a base of understanding for core concepts relevant to individual research topics. Activities include tailored workshops, fieldwork, seminar attendance, directed reading of research papers, and discussion and critiquing of research topics and trends. Presentation of a seminar and a written report based on the research frontiers examined are required for completion of this unit.

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:

Ability to reflect upon and identify the importance of environmental research

Ability to review current academic debates and identify research frontiers in environmental sciences
Develop a critical awareness of decision-making processes that shape how research is designed and data generated
Develop skills in basic research design and in working with supervisors
Awareness and appreciation for how different disciplines approach similar environmental research topics
Ability to critically assess seminars and compare and contrast research approaches
Ability to contribute to academic discussion and to communicate research ideas in oral and written form

General Assessment Information

The assessment tasks in ENVS700 are designed to:

- Encourage students to reflect upon their motivations for undertaking research and their research goals;
- Engage students with current research in environmental sciences;
- Introduce students to novel research questions and develop an understanding of core concepts;
- Develop skills in critical thinking, academic engagement, communication, and project design for research.

Assessment Tasks

Name	Weighting	Hurdle	Due
Research Report Part 1	30%	No	Week 5
Research Report Part 2	20%	No	Week 8
Oral Presentation	20%	No	Week 11
Research Frontiers Blog	30%	No	Week 12

Research Report Part 1

Due: **Week 5**
Weighting: **30%**

How do scientists approach research on a pressing environmental issue? In this assignment you are required to conduct background research and develop a research and communication

plan for a specific issue and study area. You should outline how your research can address critical questions in the study area, the research approach including the different types of methods to be used, and a communication plan for liaising with stakeholders and partners through all stages of the project.

In Week 6 you will visit the study area and meet with key stakeholders, which will give you the opportunity to assess whether the approach you have developed may work in the real world.

On successful completion you will be able to:

- Ability to reflect upon and identify the importance of environmental research
- Ability to review current academic debates and identify research frontiers in environmental sciences
- Develop skills in basic research design and in working with supervisors

Research Report Part 2

Due: **Week 8**
Weighting: **20%**

How could you improve your research design and communication plan? This is a reflective exercise designed to enable you to critically assess the approach you designed for an environmental issue at a study area. You should discuss the merits and limitations of your approach based on experiences and feedback attained through the fieldtrip, and outline key ways in which the research approach could be improved.

On successful completion you will be able to:

- Ability to reflect upon and identify the importance of environmental research
- Ability to review current academic debates and identify research frontiers in environmental sciences
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- Develop skills in basic research design and in working with supervisors

Oral Presentation

Due: **Week 11**
Weighting: **20%**

What are the frontiers in environmental research? This assessment requires you to give an oral presentation (20 minutes, with associated PowerPoint slides) in which you discuss how you could approach a novel research question in environmental science. Building on what you have learned through the earlier assessment tasks, you should apply this to your own ideas for research by explaining the current state of knowledge, knowledge gaps, and opportunities for research on your chosen topic. The presentation should include some ideas about how you

could contribute to research in your chosen field and what approach you would take to instigate this work.

On successful completion you will be able to:

- Ability to review current academic debates and identify research frontiers in environmental sciences
- Develop a critical awareness of decision-making processes that shape how research is designed and data generated
- Develop skills in basic research design and in working with supervisors
- Awareness and appreciation for how different disciplines approach similar environmental research topics
- Ability to contribute to academic discussion and to communicate research ideas in oral and written form

Research Frontiers Blog

Due: **Week 12**
Weighting: **30%**

First entry (due by Friday of Week 2): Why is environmental research important? Write a short reflective statement outlining why you have chosen to pursue a research project in the field of environmental science. Discuss your goals and motivations, and develop some preliminary ideas for research based on discussions with an academic staff member.

Second and third entries (due by Friday of Week 12): How do approaches to research differ? Write a short blog that critically assesses the approaches to research presented in at least two seminars (one blog entry per seminar). You should meet with the presenter in each case, and discuss their approaches with them. Your blog entries should consider the style of presentations, the scope and outcomes of the research, and potentially the merits and limitations of the research design and methods.

Please note that you are required to attend all Department of Environmental Sciences seminars in this session, as well as one external seminar if possible, from which you can select the seminars to form the basis of your blog entries.

On successful completion you will be able to:

- Ability to reflect upon and identify the importance of environmental research
- Ability to review current academic debates and identify research frontiers in environmental sciences
- Awareness and appreciation for how different disciplines approach similar environmental research topics
- Ability to critically assess seminars and compare and contrast research approaches

- Ability to contribute to academic discussion and to communicate research ideas in oral and written form

Delivery and Resources

ENVS700 includes classes/workshops, fieldwork, seminar attendance, directed reading of research papers, and discussion and critiquing of research topics. ENVS700 will make use of web-based teaching support through iLearn. Students require access to the internet and regular contact with the unit's iLearn site, as well as the assignment submission program on ilearn, Turnitin. To complete assignments, students need access to Word processing programs and PowerPoint (or similar) for class presentations.

Unit Schedule

Timetable

See: https://timetables.mq.edu.au

Class schedule

The program is arranged around a series of classes/workshops/activities that cover key L&T activities and align with assessment tasks. In addition, students are expected to attend all Department of Environmental Sciences seminars (related to Assessment 4) and to be in regular contact with the unit convenor and other staff members most aligned to the research frontiers that they are exploring.

Week	Date	Activity	Who	Assessment
1	1/3	Research in Environmental Sciences 1. Introduction to MRes Year 1 (w Kevin Cheung) 2. Info on Unit and Assessment tasks 3. Understanding a research frontier 4. Defining a research question	Emilie Ens	
2	8/3	Research design and project management 1. How to design a research project 2. How to manage a research project	Mark Taylor	First blog due (part of Assessment 4)
3	15/3	Research strategies and stakeholders 1. Identifying and communicating with stakeholders 2. Research skills (At Library 3-4pm)	Emilie Ens	
4	22/3			
5	29/3			Assessment 1 due (30%) Fri 29/3

6	5/4	Field Site Visit – Balls Head Coal Loader	Emilie Ens	
7	12/4			
Mid-session break:15-26 April				
8	3/5			Assessment 2 due (20%) Fri 3/5
9	10/5	Panel: Research Frontiers and Scientific publishing (panel includes Tim Ralph, Mark Taylor, Kira Westaway, Paul Hesse) - open to all DES HDR students	Tim Ralph and Mark Taylor	
10	17/5			
11	24/5	Oral presentations	Tim Ralph and Mark Taylor	Assessment 3 (20%)
12	31/5	Shaping your MRes	Tim Ralph	Assessment 4 (30%)
13	7/6			

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). 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). 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 (https://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 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

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

If you are a Global MBA student contact globalmba.support@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

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

- Ability to review current academic debates and identify research frontiers in environmental sciences
- Ability to contribute to academic discussion and to communicate research ideas in oral and written form

Assessment tasks

- Research Report Part 2
- Oral Presentation
- Research Frontiers Blog

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

- Ability to reflect upon and identify the importance of environmental research
- Ability to review current academic debates and identify research frontiers in environmental sciences
- Develop a critical awareness of decision-making processes that shape how research is designed and data generated
- Develop skills in basic research design and in working with supervisors
- Awareness and appreciation for how different disciplines approach similar environmental research topics
- Ability to critically assess seminars and compare and contrast research approaches

Assessment tasks

- Research Report Part 1

- Research Report Part 2
- Oral Presentation
- Research Frontiers Blog

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

- Ability to reflect upon and identify the importance of environmental research
- Ability to review current academic debates and identify research frontiers in environmental sciences
- Develop a critical awareness of decision-making processes that shape how research is designed and data generated
- Develop skills in basic research design and in working with supervisors
- Awareness and appreciation for how different disciplines approach similar environmental research topics
- Ability to critically assess seminars and compare and contrast research approaches

Assessment tasks

- Research Report Part 1
- Research Report Part 2
- Research Frontiers Blog

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

- Ability to reflect upon and identify the importance of environmental research
- Ability to review current academic debates and identify research frontiers in environmental sciences

- Develop a critical awareness of decision-making processes that shape how research is designed and data generated
- Develop skills in basic research design and in working with supervisors
- Awareness and appreciation for how different disciplines approach similar environmental research topics
- Ability to critically assess seminars and compare and contrast research approaches

Assessment tasks

- Research Report Part 1
- Research Report Part 2

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

- Develop skills in basic research design and in working with supervisors
- Ability to contribute to academic discussion and to communicate research ideas in oral and written form

Assessment tasks

- Research Report Part 1
- Research Report Part 2
- Oral Presentation
- Research Frontiers Blog

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

- Ability to reflect upon and identify the importance of environmental research

- Ability to contribute to academic discussion and to communicate research ideas in oral and written form

Assessment tasks

- Oral Presentation
- Research Frontiers Blog