



GSE 807

Environmental Measurement and Analysis

S1 External 2014

Dept of Environment & Geography

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General Information

Unit convenor and teaching staff

Kerrie Tomkins

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Credit points

4

Prerequisites

[16cp in GSE or HGEO units at 800 level including GSE803] or [admission to MMarScMgt or MSc in (Biodiversity Conservation or Remote Sensing and GIS) or PGDipSc in (Biodiversity Conservation or Remote Sensing and GIS) or PGCertSc in Remote Sensing and GIS]

Corequisites

Co-badged status

Unit description

This is an eight-day field unit which provides an integrated view of environmental issues – usually three physical parameters (typically: water quality; geomorphology; aquatic ecology) and two social parameters (typically: a survey of social attitudes; integrative management) of a particular region and the methods that might be used to assess and manage them. Students divide into teams and take part in each activity in the field (in 'field groups') and analyse the results (in team 'data groups'). Each student then completes a comprehensive report on the results. The region studied will normally be outside the Sydney metropolitan area (in the last few years the area chosen has been the Jervis Bay region on the New South Wales south coast). Note: permission to complete the unit without completion of GSE803 as a prerequisite will only be granted if the student has completed a science-based degree.

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:

Participate fruitfully in a wide variety of types of teamwork

Participate fruitfully in teamwork in analysing and assessing field-based data

Integrate and assess data from a wide variety of sources including field-based data, literature, interviews and social surveys etc.

Take an active part in preparing and presenting a summary of results in the field
Write a cogent, thorough and well-structured report, integrating data from a variety of disciplines

Assessment Tasks

Name	Weighting	Due
<u>Presentations</u>	25%	April 16
<u>Participation in fieldwork</u>	15%	9:00am Monday April 28
<u>INDIVIDUAL REPORT</u>	60%	9:00am Monday 26 May

Presentations

Due: **April 16**

Weighting: **25%**

PRESENTATIONS

Each Data Group will give a presentation relating to their findings at the end of the trip on Wednesday April 16. All staff members will assess each presentation, and all members of the Data Group will receive the same grade - on a Pass / Fail basis. One or all may speak, that is entirely up to the group. Presentations will be assessed as outlined on the handout. As the group is assessed as a whole, not individually, this is where teamwork will pay off!

On successful completion you will be able to:

- Participate fruitfully in a wide variety of types of teamwork
- Participate fruitfully in teamwork in analysing and assessing field-based data
- Integrate and assess data from a wide variety of sources including field-based data, literature, interviews and social surveys etc.
- Take an active part in preparing and presenting a summary of results in the field

Participation in fieldwork

Due: **9:00am Monday April 28**

Weighting: **15%**

PARTICIPATION IN FIELDWORK

Assessment of fieldwork participation will be by peer review. Each member of each Field Group will provide a mark out of 15, and a written assessment (maximum half a page) justifying that mark, reflecting the quality of the involvement of each other member of the group in the field work throughout the week. The final mark allocated to each student will be an average of the individual marks. Since it is very unlikely that every person in a group works at 100% of their

capacity at all times, groups in which each member marks each other member 15/15 will be viewed with suspicion, and the convenor will ask for further justification.

On successful completion you will be able to:

- Participate fruitfully in a wide variety of types of teamwork
- Participate fruitfully in teamwork in analysing and assessing field-based data
- Integrate and assess data from a wide variety of sources including field-based data, literature, interviews and social surveys etc.
- Take an active part in preparing and presenting a summary of results in the field

INDIVIDUAL REPORT

Due: **9:00am Monday 26 May**

Weighting: **60%**

5000 words maximum not including figs, tables and references

Major Assignment

Using data collected in the field and other relevant sources, and taking into account the relevant legislative and regulatory framework, write a comprehensive report on the effectiveness of the policy and practice of environmental management in the Jervis Bay area, including recommendations for future management. You should take into account current and projected development proposals and population projections.

Objectives

A reminder that the objectives of this Unit are to allow you to:

1. Gain experience, and develop skills, in field data collection and analysis.
2. Link data sets and disciplinary perspectives on a broadly defined problem.
3. Identify and define the implications of the data sets for management policies.

Form professional networks with other students

On successful completion you will be able to:

- Participate fruitfully in teamwork in analysing and assessing field-based data
- Integrate and assess data from a wide variety of sources including field-based data, literature, interviews and social surveys etc.
- Write a cogent, thorough and well-structured report, integrating data from a variety of disciplines

Delivery and Resources

This is an eight day field unit which provides an integrated view of environmental issues of a particular region and the methods that might be used to assess and manage them. The region studied will normally be outside the Sydney metropolitan area.

The objectives of this Unit are to allow students to

1. Gain experience, and develop skills, in field data collection and analysis.
2. Link data sets and disciplinary perspectives on a broadly defined problem.
3. Identify and define the implications of the data sets for management policies.
4. Form professional networks with other students.

The unit is team taught by experts in several fields whose aim is to assist students in learning to integrate diverse material.

Field trip Thursday April 10 - Thursday April 17, 2014

We have selected Jervis Bay and its catchment on the south coast as the focus for the fieldwork. It is an area that is facing many of the environmental problems and issues common to coastal regions outside the major metropolitan areas. The impact of future population growth in the region is of particular concern. The work that we do will contribute directly to the understanding of these problems and the development of management protocols to deal with them. Students will gain experience in field data collection in a range of discipline areas and will learn how to integrate those data sets to provide meaningful contributions to management decisions by State and Local Government authorities and community groups.

The specific task: In previous years the task has been to examine the effectiveness of foreshore management, prepare a State of the environment report focusing on specific issues, to prepare a report as input to management options, or to examine the effectiveness of Marine Park Zoning.

Organisation

The field trip will commence at 2:00pm on Thursday April 10, 2014 at the University of Canberra Field Station at Jervis Bay within the Commonwealth Jervis Bay Territory and will finish at 10:30am on Thursday April 16, 2014.

Students must make their own arrangements for transport to and from the field station. To assist, a car pool will be initiated at the pre-fieldtrip meeting. **Therefore it is very important that every student attend the meeting.**

Each student will be assigned to two different groups. One, the Field Groups (day

groups), will be for field activities and the other, the Data Groups (evening groups), will be to analyse the data collected during the week by all Field Groups. In other words, activities in the field will be carried out in Field Groups while the drawing together of, and reporting on, the data collected by the various Field Groups will be carried out in Data Groups. Each Data Group will be made up of one or two people drawn from each Field Group. This will allow a mix of experiences and perspectives to be brought to the Data Groups, as well as representation from each day to assist in keeping data analysis up to date.

Each member of the class will be assigned to a Field Group and to a Data Group at the pre-field meeting. A staff member will be responsible for one of the five different aspects of fieldwork conducted on any one day, and will guide the appropriate Data Group. Field Groups will be assigned to a series of activities on successive days where they will collect and analyse information on a variety of topics. These may include

1. management issues
2. water quality
3. aquatic ecology
4. social aspects
5. terrestrial ecology

Data Groups will meet on the first evening of the field trip to develop strategies to be followed by the Field Groups. They will continue to meet each evening to bring together the material collected on each of the five days of field work (hence the need for some people from each activity on each day). The Data Group will integrate the data to present a coherent set of files for all students to access for use in the preparation of their reports.

On the last full day of the field trip (i.e. Wednesday April 16), each Data Group will make a short (**20 minute maximum**) presentation of the outcomes of the weeks work, including an assessment of the usefulness of the data to address the question of the likely impacts of future development in the study area. All files must be gathered onto one CD and given to the Field-trip Leader on Wednesday afternoon immediately after the presentations. Each data group is advised to select one of their number to be responsible for keeping track of their data and for organising it for delivery to the Field-trip Leader.

Timetable

Thursday 10 April, 2014

- 2:00pm Arrive University of Canberra Field Station, Jervis Bay?
- 3:30pm Orientation tour of area?
- 6:00pm Dinner?

7:30pm Briefing in Data Groups

Field Work: Depart Field Station 8am, return 3:30pm						
1	Management	Aquatic ecology	Social analysis	Water quality	Terrestrial ecology	Workshops and data presentations
2	Aquatic ecology	Social analysis	Water quality	Terrestrial ecology	Management	
3	Social analysis	Water quality	Terrestrial ecology	Management	Aquatic ecology	
4	Water quality	Terrestrial ecology	Management	Aquatic ecology	Social analysis	
5	Terrestrial ecology	Management	Aquatic ecology	Social analysis	Water quality	
7:30 pm	Data Analysis	Data Analysis Lecture	Data Analysis	Data Analysis	BBQ	

Thursday 17 April, 2014: Clean up, pack up and depart by 10:30am.

Accommodation

The Jervis Bay Field Station of the University of Canberra is located in Jervis Bay Village. It provides rooms each with double bunk beds, and there are male and female showers and toilets, and a large mess hall. Blankets and pillows are supplied but most find a sleeping bag essential. Bring your own pillowcase. Cutlery and utensils are also supplied, and the meals are fully catered.

However, the field station accommodates only 40 students plus staff and, for additional students, camping accommodation will be available outside the field station, in the nearby Jervis Bay (Booderee) National Park. Regardless of where you stay, you must be at the field station ready for an 8:00am sharp departure each morning, and there will be roughly a one hour meal break between 6:00pm and 7:00pm each night, with data analysis work commencing at 7:30pm sharp. Everyone is expected to attend the BBQ on the last night and to eat at the field station. **Details of charges you will need to pay for meals and accommodation will be announced at the Preliminary Field-trip Meeting.**

Unit Schedule

Classes

1. The contact hours of this unit consist of one pre-fieldtrip meeting and the field trip.
2. **The pre-field trip meeting will be held at the end of week 2 Friday March 14 in E8A 341.** This meeting will be used to explain the arrangements in more detail, organise a carpool, etc and to introduce you to the unit and to the staff members who will be attending the field trip. Staff will outline the proposed field and data analysis methods to be undertaken for their particular area of responsibility at the meeting.
3. **The field trip will be held from Thursday April 10th to Thursday April 17th, 2014 at the University of Canberra field station at Jervis Bay.**

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.html>

Grading Policy <http://mq.edu.au/policy/docs/grading/policy.html>

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

Grievance Management Policy http://mq.edu.au/policy/docs/grievance_management/policy.html

Disruption to Studies Policy http://www.mq.edu.au/policy/docs/disruption_studies/policy.html *The Disruption to Studies Policy is effective from March 3 2014 and replaces the Special Consideration Policy.*

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/

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://informatics.mq.edu.au/help/>.

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

Graduate Capabilities

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

- Integrate and assess data from a wide variety of sources including field-based data, literature, interviews and social surveys etc.

- Take an active part in preparing and presenting a summary of results in the field
- Write a cogent, thorough and well-structured report, integrating data from a variety of disciplines

Assessment tasks

- Presentations
- INDIVIDUAL REPORT

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

- Participate fruitfully in teamwork in analysing and assessing field-based data
- Integrate and assess data from a wide variety of sources including field-based data, literature, interviews and social surveys etc.
- Write a cogent, thorough and well-structured report, integrating data from a variety of disciplines

Assessment tasks

- Presentations
- INDIVIDUAL REPORT

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

- Participate fruitfully in teamwork in analysing and assessing field-based data
- Integrate and assess data from a wide variety of sources including field-based data, literature, interviews and social surveys etc.
- Write a cogent, thorough and well-structured report, integrating data from a variety of

disciplines

Assessment tasks

- Presentations
- Participation in fieldwork
- INDIVIDUAL REPORT

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

- Participate fruitfully in a wide variety of types of teamwork
- Take an active part in preparing and presenting a summary of results in the field
- Write a cogent, thorough and well-structured report, integrating data from a variety of disciplines

Assessment tasks

- Presentations
- Participation in fieldwork
- INDIVIDUAL REPORT

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

- Participate fruitfully in a wide variety of types of teamwork
- Take an active part in preparing and presenting a summary of results in the field
- Write a cogent, thorough and well-structured report, integrating data from a variety of disciplines

Assessment tasks

- Presentations
- Participation in fieldwork
- INDIVIDUAL REPORT

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

- Participate fruitfully in a wide variety of types of teamwork
- Take an active part in preparing and presenting a summary of results in the field
- Write a cogent, thorough and well-structured report, integrating data from a variety of disciplines

Assessment tasks

- Presentations
- Participation in fieldwork
- INDIVIDUAL REPORT

Changes since First Published

Date	Description
16/01/2014	The Prerequisites was updated.