CLIM803

Climate Change Impacts and Adaption

S2 Day 2014

Dept of Biological Sciences

Contents

General Information

Unit convenor and teaching staff
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Credit points
4

Prerequisites
Admission to MClimCh or MEnv or PGDipEnv or PGCertEnv or MWldMgt or PGDipWldMgt or PGCertWldMgt or MSC in Biodiversity Conservation or PGDipSc in Biodiversity Conservation or PGCertSc in Biodiversity Conservation

Corequisites

Co-badged status

Unit description
This unit focuses on the impacts of climate change, both those already observed and projections for the twenty-first century, on components of the Earth System including the physical environment, the marine and terrestrial biosphere, biodiversity, ecosystems goods and services, and human health and well-being.

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:

1. analysing, questioning, and synthesising knowledge about the impacts of climate change on a broad range of sectors, and drawing connections across fields of knowledge

2. utilising research skills to identify impacts of climate change on a given sector
3. demonstrating creative problem solving skills to develop adaptation strategies that increase resilience to climate change
4. identifying areas of scientific uncertainty and complexity with regards to different sectors, and accounting for this in adaptation strategies
5. identifying barriers and challenges to implementing adaptation responses
6. transferring knowledge and skills regarding adaptation planning to industries/sectors beyond your personal experience
7. confidently communicate and convey knowledge of climate change sciences in forms appropriate to different audiences.

Assessment Tasks

Name	Weighting	Due
2 x Impacts Reports	25%	Week 10
Essay: Challenges to adaptatio	20%	Week 8
Adaptation plan	40%	Week 13
Seminar	15%	Week 12

2 x Impacts Reports

Due: **Week 10**
Weighting: **25%**

You will develop two impacts reports on two different topics presented in weeks 2-9. Each report should be 1,000 words (not counting references) and include at least one table or figure created by you (i.e. not copied from another source). Using real-world examples, you will identify vulnerability to climate change and utilise tools to develop forecasts of future impacts specific to that example.

On successful completion you will be able to:

- 1. analysing, questioning, and synthesising knowledge about the impacts of climate change on a broad range of sectors, and drawing connections across fields of knowledge
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- 4. identifying areas of scientific uncertainty and complexity with regards to different

sectors, and accounting for this in adaptation strategies

- 7. confidently communicate and convey knowledge of climate change sciences in forms appropriate to different audiences.

Essay: Challenges to adaptatio

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

Using real-world examples from a sector/industry/bioregion of your choice, you will write a 1,500-word essay on challenges or barriers to developing and implementing adaptation responses in developing vs developed countries.

On successful completion you will be able to:

- 2. utilising research skills to identify impacts of climate change on a given sector
- 3. demonstrating creative problem solving skills to develop adaptation strategies that increase resilience to climate change
- 4. identifying areas of scientific uncertainty and complexity with regards to different sectors, and accounting for this in adaptation strategies
- 5. identifying barriers and challenges to implementing adaptation responses
- 6. transferring knowledge and skills regarding adaptation planning to industries/sectors beyond your personal experience
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Adaptation plan

Due: **Week 13**
Weighting: **40%**

Using templates provided in class, students will develop an adaptation plan for a given organisation/bioregion. This task will require synthesising the knowledge gained from discussions, researching the range of impacts specific to that organisation/bioregion, identifying exposure or vulnerability to climate change, and developing responses or strategies to minimise negative impacts. Depending on class size, this assessment may be altered slightly so that it can be group-based.

On successful completion you will be able to:

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- 3. demonstrating creative problem solving skills to develop adaptation strategies that increase resilience to climate change
- 4. identifying areas of scientific uncertainty and complexity with regards to different sectors, and accounting for this in adaptation strategies
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Seminar

Due: **Week 12**
Weighting: **15%**

Each student will give a 15 min talk on their adaptation plan, and lessons they learnt when developing it. The goal of the seminar is three-fold. Firstly, oral communication of science is an important skill for students to develop; secondly, listening to other seminars provides students with greater exposure to different topics; thirdly, writing the seminar provides students with the opportunity to reflect on their learning experience and on which of the practices they undertook worked and which did not. All talks are to be presented in PowerPoint. A copy of instructions will also be posted on iLearn.

On successful completion you will be able to:

- 7. confidently communicate and convey knowledge of climate change sciences in forms appropriate to different audiences.

Delivery and Resources

Assignment submission

All students need to submit their written assessments via TURNITIN. Assessments must be submitted by 11am Wednesday of the week it is due.

TURNITIN is a powerful online tool for the detection of plagiarism. It works by comparing the text of a submitted document (i.e., your assignment) with the work of your current classmates, past students, as well as published material in books, journals and on the web.

To submit your assignment via turnitin:

1. Visit the Assessments tab in iLearn, look for the turnitin header and select the relevant assessment item (Practical Report or Field Trip Report).

1. Click on the **Submit Paper** tab.
2. Select **Student Name** of the student who you are submitting on behalf of.
3. Enter a **Submission Title**.
4. Select **Submission Part** if there are multiple parts available.
5. Click **Browse** and select the file you would like to submit.
6. Click **Add Submission**.

Academic Honesty

Presenting the work of another person as one's own is a serious breach of the University's rules and carries significant penalties. The University's Academic Honesty Policy can be found at:

http://www.mq.edu.au/policy/docs/academic_honesty/policy.html

In this unit, we will be checking written work for plagiarism using TURNITIN. Penalties for plagiarism may include a zero mark for the assignment or in more extreme cases, failure of the unit. Plagiarism WILL be noted on your academic record. Full details of penalties can be found at:

http://www.mq.edu.au/policy/docs/academic_honesty/schedule_penalties.html

Extensions, penalties and special consideration

In order to pass this course, you will be required to attempt ALL assessments. Late assignments will attract a penalty of **10%** of the total marks allocated to the exercise per day.

You may hand in your work after the due date and escape penalty only if you have an acceptable reason (usually a medical certificate). Discuss your problem with the Lecturer as early as possible before the due date.

Information about the Special Considerations policy and procedure is online at Policy Central: http://mq.edu.au/policy/docs/special_consideration/procedure.html. All requests for special consideration should be submitted using the online form:

http://web.science.mq.edu.au/new_and_current_students/undergrad/admin_central/

Return of Assessment Tasks

Marked assignments and feedback sheets will be available 2-3 weeks after assignment submission. Internal students should collect these from the Science Centre. External students will receive marked work through the mail.

Grading

Academic Senate has a set of guidelines on the distribution of grades across the range from fail to high distinction. These grades reflect the academic standard you have met, with respect to the learning outcomes. Your final result will include one of these grades plus a standardised numerical grade (SNG). It is possible that your raw mark for this unit (i.e., the total of your marks for each assessment item) may not be the same as the SNG which you receive. Under the Senate guidelines, results may be scaled.

To pass this unit, you need to have demonstrated that you have met all learning outcomes.

RESOURCES

Required and recommended texts and/or materials

There is no prescribed text book for this course. Instead, I have compiled a collection of readings, vodcasts, podcasts and websites that directly complement the lectures. These are available via the iLearn site for this unit. Students are expected to have gone through the material for that week PRIOR to coming to class.

Unit web page

PowerPoint slides, lecture recordings, unit readings, copies of all unit hand-outs and helpful resources for completion of assessments will be available through iLearn. Consequently, it is strongly recommended that you interact with the CLIM803 online unit regularly. **To access the online unit, go to https://iLearn.mq.edu.au/login/MQ/ and type in your Macquarie OneID Username and password.**

New to iLearn? You can find out more at: http://www.mq.edu.au/iLearn/student_info/

Unit Schedule

About this unit

We live in a world with a rapidly changing climate, the consequences of which will have broad impacts on our way of life. To reduce the environmental, societal and economic costs of climate change adaptation is essential. But what impacts are expected and what does adaptation look like? The foundation to this unit is a diverse set of real world case studies, spanning natural resource and biodiversity management, water and energy security, human health and disaster management, green infrastructure, and enhancing livelihoods in developing countries. Presenting this unit is a partnership of scientists who research climate impacts and responses, and expert government officers, NGO's and consultants who develop or implement adaptation strategies. This unit will enhance the analytical, integrative and critical thinking skills of students, and challenge them to think outside the box to develop creative approaches that combat the negative impacts of climate change.

- Successful completion of this unit will earn you 4 credit points.
- The unit may be completed internally (D2).

Classes

The unit consists of 2 lectures per week and a one hour tutorial, run back-to-back. These will be held in E7A829. **If possible, please bring a laptop with you.**

Attendance is compulsory.

- *Lectures:* Wednesday 3-5 pm

- *Tutorials:* Wednesday 5-6 pm

Teaching and learning strategy

Already, diverse organisations and peoples are developing adaptation plans to increase resilience to climate change. To develop students' skills in this rapidly growing area, most lectures/tutorials will be in the format of discussions between the speaker and the students. Students will be expected to turn up to class having ALREADY undertaken set activities (which may be in the form of reading scientific papers, watching vodcasts, using web-based tools, or researching other examples of that weeks topic): these will provide students with background knowledge needed for the discussion and for group-based critique of theory and practice. Thus, classes should be viewed as a time for peer learning, and I encourage you to participate actively to maximise your learning. The range of topics has been selected to showcase real-world examples of climate impacts and responses from a broad range of cultures, socio-economic levels, and industries. The assessment tasks have been designed to enable students to incorporate their personal interests and the nature of their professional work.

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://stu

dents.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

- 1. analysing, questioning, and synthesising knowledge about the impacts of climate change on a broad range of sectors, and drawing connections across fields of knowledge
- 2. utilising research skills to identify impacts of climate change on a given sector
- 4. identifying areas of scientific uncertainty and complexity with regards to different sectors, and accounting for this in adaptation strategies
- 5. identifying barriers and challenges to implementing adaptation responses

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

- 1. analysing, questioning, and synthesising knowledge about the impacts of climate change on a broad range of sectors, and drawing connections across fields of knowledge
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- 4. identifying areas of scientific uncertainty and complexity with regards to different sectors, and accounting for this in adaptation strategies

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

- 2. utilising research skills to identify impacts of climate change on a given sector
- 3. demonstrating creative problem solving skills to develop adaptation strategies that increase resilience to climate change
- 4. identifying areas of scientific uncertainty and complexity with regards to different sectors, and accounting for this in adaptation strategies
- 5. identifying barriers and challenges to implementing adaptation responses

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 outcome

- 7. confidently communicate and convey knowledge of climate change sciences in forms appropriate to different audiences.

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 outcome

- 6. transferring knowledge and skills regarding adaptation planning to industries/sectors beyond your personal experience

Changes since First Published

Date	Description
22/01/2014	The Name was updated.