

Course guide for Climate Change Responses

This is an undergraduate course taught to students in the Bachelor of Urban and Regional Planning (Honours) at RMIT University.

Course Description

As climate change proceeds, we need to think critically about how we are, and should be, responding. This course presents you with an integrated and contextualised approach to climate change responses, with a focus on social, political, cultural and psychological aspects of such responses. You will examine the relationship between climate change adaptation and mitigation and intentional responses such as climate-smart development, resilience thinking, geoengineering and carbon sequestration. You will consider how climate change responses are shaped by cultural, environmental and socio-political contexts.

This course will provide a brief introduction to global climate change science, including the role of science in climate change discourse. It focuses on the conceptual, political and practical challenges presented by the onset of climate change. You will be required to consider how climate change responses are framed differently by different actors; starting with different perceptions about whether the responses need to be incremental or transformational. Given that we are living in 'the urban age' you will examine the particular challenges facing urban dwellers and urban planners. You will grapple with questions related to ethics, equity, vulnerability and capacity, and the potential for systemic changes such as relocation, and decarbonisation.

Objectives/Learning Outcomes/Capability Development:

Course Learning Outcomes

Upon successful completion of this course, you will be able to:

- Outline the key cultural, societal, psychological and ethical challenges posed by the onset of global climate change;
- Identify some of the different ways in which climate change challenges are being perceived and represented;
- Explain some of the uneven and unpredictable effects of climate change and offer some reasons for differing vulnerabilities and capacities to respond;
- Relate climate change responses to the impacts of, and responses to, other global challenges;
- Identify drivers, risks and opportunities associated with other responses such as carbon sequestration and geoengineering;

- Compare climate change responses in Australia to those unfolding on other parts of the world.

Program Learning Outcomes

In this course you will develop the following program learning outcomes:

- Apply a body of theoretical and practical knowledge of principles and practices in natural resource management, sustainability, globalisation and environmental management to professional practice or further study;
- Critically analyse, synthesise and reflect on knowledge related to the social implications of environmental concerns and challenges both in Australia and globally;
- Analyse stakeholder needs and the design, planning, resourcing and development of projects in environmental and social sustainability;
- Assist in the identification of needs, and the design, planning, resourcing and development of projects in environmental and social sustainability;
- Reflect on the experience of personal and professional practice in international and cross-cultural settings and to act in professionalized settings responsibly, ethically and with integrity.

Teaching Schedule

The following is indicative of the topics covered (note, the specific details may change).

Week 1. Overview: science, politics, action

Week 2. Climate change risks, impacts and disasters

Week 3. Vulnerabilities, adaptive capacity and resilience

Week 4. Climate change adaptation principles and examples 1

Week 5. Climate change adaptation principles and examples 2

Week 6. Barriers and limits to climate change adaptation

Week 7. Greenhouse gases and earth systems

Week 8. Greenhouse gas mitigation principles and examples 1

Week 9. Greenhouse gas mitigation principles and examples 2

Week 10. Barriers to effective mitigation

Week 11. Negative emissions approaches

Week 12. Sum up: transformation ahead?

Assessment Tasks

Assignment 1. Climate change impacts and adaptation report, 50%

Overview

This assignment is designed to deepen your understanding of climate change impacts, vulnerabilities and adaptation through analysis of a real world case study of your choice (eg where you live, an organisation you work for or would like to work for). It is designed to develop your skills in problem solving and writing consulting-style reports of the sort that you will inevitably need to write at some point in your careers, and that are already being produced in many quarters on this exact topic. The reports should be pithy, insightful, well-structured and well-presented syntheses of the key issues and must include at least one visual of your own design (a figure, map, table). Examples will be provided.

Details

Participation in peer review of draft reports (10%) – Weeks 3-4

Report 1500-2000 words (40%), due 12 noon Friday Week 6

Description

Choose a real local government area or organization. Draw on academic and grey literature to analyse how they are vulnerable to different aspects of climate change and what they can do to adapt.

Ensure you cover in your report:

- An overview of your case, considering (as appropriate) their assets, functions, people, dependencies and objectives
- Their existing strengths and weaknesses (vulnerabilities)
- Their exposure and sensitivity to specific climate change impacts (direct and indirect)
- Possible adaptation options, and their risks, costs, benefits, feedbacks and interactions
- Barriers and limits to, and enablers of, desired adaptation.
- Recommended priority adaptation actions.

Assignment 2. Climate change abatement report, 50%

Overview

To continue to build on the report-writing skills you developed in Assessment 1, and put recommended improvements into action, this Assessment uses the same format but focuses on another aspect of climate change: the crucial question of greenhouse gas mitigation. The aim is for you to analyse the pros and cons of a specific proposed solution.

Details

Presentation to class of detailed outline (10%) – Tutorial during weeks 9/10

Report 1500-2000 words (40%), Due Week 12

Description

A wide array of proposed solutions to reducing atmospheric greenhouse gas concentrations exist. Eg:

1. Compact cities
2. Renewable energy
3. Carbon sequestration
4. Reducing consumption
5. Controlling population growth

From a list to be provided (eg similar to that above), your task is to choose one - and then choose a subtopic within it if you would like (eg for renewables you could focus on solar energy in Australia, for reduced consumption you could choose reduced meat consumption). Then answer the following: What are the strengths and weaknesses of using this approach to abate climate change?

Drawing on the academic literature and real-world examples, in your report address the following sub-questions:

- Logic
 - How does the proposed solution reduce greenhouse gas concentrations?
 - Are there specific conditions required for it to have its desired effect?
- Implementation
 - What is the potential for implementing this approach on a large scale?
 - What barriers does it face? What would effective, large scale, sustained implementation require?
- Co-benefits and risks
 - What possible co-benefits does the approach offer?
 - What possible risks, costs or injustices does it pose and to whom or what?
- Conclusion
 - Overall, what are its pros and cons and to what extent is the approach an important aspect of society's effort to abate climate change?