



# SOC 254

## Science, Society and Environment

MQC2 Evening 2015

*Dept of Sociology*

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## General Information

Unit convenor and teaching staff

Lecturer in Charge

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Course Moderator

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Credit points

3

Prerequisites

12cp

Corequisites

Co-badged status

Unit description

This unit examines the relationship between science and society through environmental sustainability. We focus on two big questions: how can we understand science and scientific developments as social processes and institutions; and how can we understand the implications of scientific advance and insights on society in light of environmental issues? We examine how science developed through Modernity, how scientific knowledge is formed and how it's used in the policy process. We look at the continuum of values from conventional instrumental to deep ecological values and investigate their uses in environmental policy. The first question is addressed through an analysis of what we mean by scientific knowledge, how this might differ from other knowledge systems and how science is actually practiced and new insights developed. The second question we address through debates on climate change and sustainability. We ask how and why scientists have raised questions about environmental sustainability. What is the basis of these claims and of criticisms of science? How have scientists engaged in broader social and political debates to advance their environmental insights? How have scientists influenced our societies to become more sustainable, and why have they not been more successful?

## 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:

Explore and explain the relationship between society, science and environment.

Appreciate historically changing conceptions of environmental understandings and sustainability.

Understand the place of values in the production of knowledge and the way the environment is conceived.

Explore differences between societies in terms of environmental problems and solutions.

## Assessment Tasks

Name	Weighting	Due
<u>Participation</u>	10%	Ongoing
<u>Research Report</u>	25%	Week 13
<u>Book Review</u>	30%	Week 5
<u>Reflection Tasks</u>	20%	Various
<u>Research Presentation</u>	15%	Week 12

### Participation

Due: **Ongoing**

Weighting: **10%**

This mark is composed of contribution to class discussions, including leading discussion as part of a group one week.

#### Leading Discussion

Each student will be responsible for leading discussion once per session, either individually or as part of a group. On that occasion, students will prepare by reading at least one of the extra readings as well as the required reading, and facilitate discussion on the tutorial topic.

#### Participation in tutorials/seminars

Students are expected to participate in the class discussions facilitated by the presenting group each week. Participation marks are based on what you contribute to debate and discussion during tutorials, your engagement in the group learning environment and your thoughtful contributions that reflect careful reading and consideration of the course material. Comments should reflect prior preparation and familiarity with the material covered in the lectures and

readings.

Marking Criteria:

- Demonstrated preparation for tutorials in terms of completing the weekly readings.
- Active involvement in discussions.
- Constructive tactful engagement with classmates.
- Listening attentively.

This Assessment Task relates to the following Learning Outcomes:

- Explore and explain the relationship between society, science and environment
- Appreciate historically changing conceptions of environmental understandings and sustainability
- Understand the place of values in the production of knowledge and the way the environment is conceived
- Explore differences between societies in terms of environmental problems and solutions

On successful completion you will be able to:

- Explore and explain the relationship between society, science and environment.
- Appreciate historically changing conceptions of environmental understandings and sustainability.
- Understand the place of values in the production of knowledge and the way the environment is conceived.
- Explore differences between societies in terms of environmental problems and solutions.

## Research Report

Due: **Week 13**

Weighting: **25%**

A 2000 word report in which students investigate an environmental issue.

### Submission

Students must submit an electronic copy of the report via iLearn (Turnitin).

This Assessment Task relates to the following Learning Outcomes:

- Explore and explain the relationship between society, science and environment
- Appreciate historically changing conceptions of environmental understandings and sustainability
- Understand the place of values in the production of knowledge and the way the environment is conceived

- Explore differences between societies in terms of environmental problems and solutions

On successful completion you will be able to:

- Explore and explain the relationship between society, science and environment.
- Appreciate historically changing conceptions of environmental understandings and sustainability.
- Understand the place of values in the production of knowledge and the way the environment is conceived.
- Explore differences between societies in terms of environmental problems and solutions.

## Book Review

Due: **Week 5**

Weighting: **30%**

A 1500 word review of a book on an environmental issue. Suggestions for books will be provided as well as examples of academic book reviews

### Submission

Students must submit an electronic copy of the review via iLearn (Turnitin) as well as a hard copy to be handed in during class.

This Assessment Task relates to the following Learning Outcomes:

- Explore and explain the relationship between society, science and environment
- Appreciate historically changing conceptions of environmental understandings and sustainability
- Understand the place of values in the production of knowledge and the way the environment is conceived

On successful completion you will be able to:

- Explore and explain the relationship between society, science and environment.
- Appreciate historically changing conceptions of environmental understandings and sustainability.
- Understand the place of values in the production of knowledge and the way the environment is conceived.
- Explore differences between societies in terms of environmental problems and solutions.

## Reflection Tasks

Due: **Various**

Weighting: **20%**

Four online assessments posted on iLearn.

This Assessment Task relates to the following Learning Outcomes:

- Explore and explain the relationship between society, science and environment
- Appreciate historically changing conceptions of environmental understandings and sustainability
- Understand the place of values in the production of knowledge and the way the environment is conceived
- Explore differences between societies in terms of environmental problems and solutions

On successful completion you will be able to:

- Explore and explain the relationship between society, science and environment.
- Appreciate historically changing conceptions of environmental understandings and sustainability.
- Understand the place of values in the production of knowledge and the way the environment is conceived.
- Explore differences between societies in terms of environmental problems and solutions.

## Research Presentation

Due: **Week 12**

Weighting: **15%**

Students are required to give a short (approximately 5 minute) presentation to the class on the same subject as their research report. This assessment is an opportunity to receive feedback on their major assessment before submitting it.

### Submission

Students must submit a copy of their powerpoint presentation via iLearn.

On successful completion you will be able to:

- Explore and explain the relationship between society, science and environment.
- Appreciate historically changing conceptions of environmental understandings and sustainability.
- Understand the place of values in the production of knowledge and the way the environment is conceived.

- Explore differences between societies in terms of environmental problems and solutions.

## Delivery and Resources

iLearn is the primary delivery method for all resources. The readings are all delivered through iLearn, as are descriptions of the topics and tutorials, as well as online quizzes.

The research report and book review must be submitted through turnitin on iLearn.

## Unit Schedule

Week	Lecture Topic	Readings
1	Sociology, Modernity and the Environment	<ol style="list-style-type: none"> <li>1. Hannigan, J A (1995) 'Social Construction of Environmental Problems', in Hannigan, J A (1995) <i>Environmental Sociology – A Social Constructionist Perspective</i>, Routledge, New York: 38-57.</li> <li>2. Dunlap, Riley and Brent K. Marshall (2007), 'Environmental Sociology', in Clifton D. Bryant &amp; Dennis L. Peck (eds) <i>21st Century Sociology</i>, Sage Publications, Chapter 38.</li> <li>3. Margaret L. Andersen &amp; Howard F. Taylor (2011) <i>Sociology the essentials</i>, Cengage Learning Belmont, CA, 6<sup>th</sup> edition, Chapter 1</li> </ol>
2	Scientific Knowledge and the Science of Climate Change	<ol style="list-style-type: none"> <li>1. Robyn Williams (2011), 'Science without a capital s', in <i>Griffith Review</i>, No 31, Autumn 2011: 102-110.</li> <li>2. Bruno Latour (2013), <i>An Inquiry into Modes of Existence</i>, Harvard University Press, Cambridge, Ch 1, 'Trusting Institutions Again?'</li> <li>3. Sharon Beder, 'Industry Conjurers'. in <i>Overland</i>, Vol 195, Winter 2009: 54-58.</li> <li>4. Pepper, David (1996) 'Pre-Modern and Modern Ideas about Nature and Science – the roots of technocentrism', in Pepper, David (1996) <i>Modern Environmentalism – An Introduction</i>, Routledge, London: 124-163</li> </ol>
3	Modernity and Biodiversity	<ol style="list-style-type: none"> <li>1. Chapin, S F et al (2000) 'Consequences of changing biodiversity', <i>Nature</i>, Vol 405, 11 May 2000: 234-242.</li> <li>2. Connelly and Smith (1999) 'Introduction', in <i>Politics and the Environment – From Theory to Practice</i>, Routledge, London: 2-9.</li> <li>3. Barnosky et al (2012) 'Approaching a state shift in Earth's biosphere', <i>Nature</i>, Vol. 486, 7 June 2012, pp. 52-58.</li> <li>4. Cardinale <i>et al</i> (2012) 'Biodiversity loss and its impact on humanity', <i>Nature</i>, Vol. 486, 7 June 2012, pp. 59 - 67</li> </ol>
4	Academic Skills for Social Science	No readings

5	Population, Migration and Environment	<ol style="list-style-type: none"> <li>1. Margaret L. Andersen &amp; Howard F. Taylor (2011) <i>Sociology the essentials</i>, Cengage Learning Belmont, CA, 6<sup>th</sup> edition. Chapter 16, Population, the Environment, and Social Change: 401-433.</li> <li>2. Daniel B. Botkin &amp; Edward A. Keller (2011) <i>Environmental science: earth as a living planet</i>, 8<sup>th</sup> edition, John Wiley &amp; Sons, Inc., Chapter 4, 'The Human Population and the Environment', pp 59 - 79</li> <li>3. Diana Coole (2013) Too many bodies? The return and disavowal of the population question, <i>Environmental Politics</i>, 22:2</li> <li>4. Perry Sadorsky (2014) 'The Effect of Urbanization and Industrialization on Energy Use in Emerging Economies: Implications for Sustainable Development', <i>American Journal of Economics and Sociology</i>, Vol. 73, No. 2: 392 – 409</li> <li>5. Ramin Keivani (2010) A review of the main challenges to urban sustainability, <i>International Journal of Urban Sustainable Development</i>, 1:1-2, 5-16</li> </ol>
6	Politics and Policy	<ol style="list-style-type: none"> <li>1. Barry &amp; Dobson (2004) 'Green Political Theory: A Report' Chapter 14 in Gerald F. Gaus &amp; Chandran Kukathas (eds) <i>Handbook Of Political Theory</i>, SAGE Publications, London: 181-191.</li> <li>2. Dovers Thinking about Policy</li> <li>3. Sarah B. Pralle (2009) 'Agenda-setting and climate change', <i>Environmental Politics</i>, 18:5, 781-799.</li> <li>4. Peter J. Jacques , Riley E. Dunlap &amp; Mark Freeman (2008) 'The organisation of denial: Conservative think tanks and environmental scepticism', <i>Environmental Politics</i>, 17:3, 349-385.</li> <li>5. Mark Beeson (2010) The coming of environmental authoritarianism, <i>Environmental Politics</i>, 19:2, 276-294.</li> <li>6. Fletcher, Amy Lynn (2009) 'Clearing the air: the contribution of frame analysis to understanding climate policy in the United States', <i>Environmental Politics</i>, 18:5: 800-816.</li> <li>7. Christopher Wright &amp; Daniel Nyberg (2014) Creative self-destruction: corporate responses to climate change as political myths, <i>Environmental Politics</i>, 23:2, 205-223.</li> </ol>
7	Energy & Society	<ol style="list-style-type: none"> <li>1. Shwom, Rachael &amp; Lorenzen, Janet A. (2012) 'Changing household consumption to address climate change: social scientific insights and challenges', <i>Wiley Interdisciplinary Reviews: Climate Change</i>, Volume 3, Issue 5, : 379–395.</li> <li>2. Brad Jessup (2010) Plural and hybrid environmental values: a discourse analysis of the wind energy conflict in Australia and the United Kingdom, <i>Environmental Politics</i>, 19:1, 21-44</li> <li>3. Huber, Matt (2013), 'Fueling Capitalism: Oil, the Regulation Approach, and the Ecology of Capital', <i>Economic Geography</i> Volume 89, Issue 2: 171–194</li> </ol>
8	Neoliberalism, Markets and Policy	<ol style="list-style-type: none"> <li>1. Kyla Tienhaara (2014) 'Varieties of green capitalism: economy and environment in the wake of the global financial crisis', <i>Environmental Politics</i>, 23:2, 187-204. Nik Heynen &amp; Paul Robbins (2005) 'The neoliberalization of nature: Governance, privatization, enclosure and valuation', <i>Capitalism Nature Socialism</i>, 16:1, pp 5-8.</li> <li>2. Jason W. Moore (2010), Cheap Food &amp; Bad Money Food. <i>Frontiers, and Financialization in the Rise and Demise of Neoliberalism ,review</i>, xxxiii, 2/3, pp. 225–61.</li> <li>3. Jessica Dempsey &amp; Morgan M. Robertson (2012) 'Ecosystem services: Tensions, impurities, and points of engagement within neoliberalism', <i>Progress in Human Geography</i> 36(6): 758–779.</li> <li>4. <a href="http://www.smh.com.au/federal-politics/political-news/julie-bishop-reopens-nuclear-debate-as-route-to-cut-carbon-dioxide-emissions-20141129-11w17k.html">http://www.smh.com.au/federal-politics/political-news/julie-bishop-reopens-nuclear-debate-as-route-to-cut-carbon-dioxide-emissions-20141129-11w17k.html</a></li> </ol>
9	Research project workshop	



10	Climate Change, Science and Environmental Risk	<ol style="list-style-type: none"> <li>1. Nick Pidgeon &amp; Catherine Butler (2009) 'Risk analysis and climate change', <i>Environmental Politics</i>, 18:5, 670-688.</li> <li>2. Göran Duus-Otterström &amp; Sverker C. Jagers (2011), 'Why (most) climate insurance schemes are a bad idea', <i>Environmental Politics</i>, 20:3, 322-339</li> <li>3. Harriet Bulkeley (2001), 'Governing Climate Change: The Politics of Risk Society?', <i>Transactions of the Institute of British Geographers</i>, New Series, Vol. 26, No. 4, pp. 430-447.</li> <li>4. Carolan, Michael S (2006), 'Risk, Trust and 'The Beyond' of the Environment: A Brief Look at the Recent Case of Mad Cow Disease in the United States.' <i>Environmental Values</i> 15, no. 2, (2006): 233-252.</li> <li>5. Margarita V. Alario &amp; William R. Freudenburg (2010) , 'Environmental Risks and Environmental Justice, Or How Titanic Risks Are Not So Titanic After All', <i>Sociological Inquiry</i>, Vol. 80, No. 3: 500–512.</li> </ol>
11	The Environmental Crisis & the Future	<ol style="list-style-type: none"> <li>1. Christopher Wright, Daniel Nyberg, Christian De Cock &amp; Gail Whiteman (2013), 'Future imaginings: organizing in response to climate change', <i>Organization</i> 20(5): 647–658.</li> <li>2. Martin Wolf (2012) 'Living with limits: growth, resources, and climate change', <i>Climate Policy</i>, 12:6, 772-783.</li> </ol>
12	Presentations	
13	Conclusions	

## 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](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](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](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/](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](http://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](http://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

### 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

- Understand the place of values in the production of knowledge and the way the environment is conceived.
- Explore differences between societies in terms of environmental problems and solutions.

## Assessment tasks

- Research Report
- Book Review
- Research Presentation

## 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

- Understand the place of values in the production of knowledge and the way the environment is conceived.

## 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

- Explore and explain the relationship between society, science and environment.
- Appreciate historically changing conceptions of environmental understandings and sustainability.
- Explore differences between societies in terms of environmental problems and solutions.

## Assessment tasks

- Participation

- Research Report
- Book Review
- Reflection Tasks
- Research Presentation

## 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

- Explore and explain the relationship between society, science and environment.
- Appreciate historically changing conceptions of environmental understandings and sustainability.
- Understand the place of values in the production of knowledge and the way the environment is conceived.
- Explore differences between societies in terms of environmental problems and solutions.

### Assessment tasks

- Participation
- Research Report
- Book Review
- Reflection Tasks
- Research Presentation

## 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

- Explore and explain the relationship between society, science and environment.
- Appreciate historically changing conceptions of environmental understandings and

sustainability.

- Understand the place of values in the production of knowledge and the way the environment is conceived.
- Explore differences between societies in terms of environmental problems and solutions.

## **Assessment tasks**

- Participation
- Research Report
- Research Presentation

## **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 outcome**

- Understand the place of values in the production of knowledge and the way the environment is conceived.

## **Assessment tasks**

- Participation
- Research Report
- Book Review
- Research Presentation

## **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**

- Explore and explain the relationship between society, science and environment.
- Appreciate historically changing conceptions of environmental understandings and

sustainability.

- Understand the place of values in the production of knowledge and the way the environment is conceived.
- Explore differences between societies in terms of environmental problems and solutions.

## **Assessment tasks**

- Participation
- Research Report
- Book Review
- Reflection Tasks
- Research Presentation

## **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**

- Explore and explain the relationship between society, science and environment.
- Appreciate historically changing conceptions of environmental understandings and sustainability.
- Understand the place of values in the production of knowledge and the way the environment is conceived.
- Explore differences between societies in terms of environmental problems and solutions.

## **Assessment tasks**

- Participation
- Research Report
- Book Review
- Reflection Tasks
- Research Presentation