



SOC 254

Science, Society and Environment

S2 External 2018

Dept of Sociology

Contents

<u>General Information</u>	2
<u>Learning Outcomes</u>	3
<u>General Assessment Information</u>	3
<u>Assessment Tasks</u>	4
<u>Delivery and Resources</u>	6
<u>Unit Schedule</u>	8
<u>Learning and Teaching Activities</u>	9
<u>Policies and Procedures</u>	9
<u>Graduate Capabilities</u>	10

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General Information

Unit convenor and teaching staff

Convenor

Dr. Marc Torka

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On request

Co-convenor

Dr. James Dorahy

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On request

Credit points

3

Prerequisites

12cp at 100 level or above

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 historically changing relationships between society, science and the environment.

Identify social, scientific, economic, political and ecological interdependencies

Appreciate complexity and uncertainty in both everyday and political environmental decision making

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

Appreciate the value of traditional ecological knowledge in re-thinking western notions of sustainability

General Assessment Information

Attendance

Attendance of lectures and tutorials in this unit is mandatory for internal students. Exemption is given only if you are enrolled in iLecture mode, in which case you will be asked to submit lecture summaries (300 words) on iLearn each week which will be assessed instead of your weekly lecture attendance.

You will be assessed on your presence in lectures and tutorials, and your preparation for classes (including completion of reading materials, engagement in classroom discussion, ability to answer questions and participation in teamwork exercises). Your face to face participation is the backbone of your learning and assessment.

80% of lecture and tutorial attendance is required at the minimum (minus medical exemption).

Assignment submission

Your Book Review and Online Exam will be submitted electronically via **TURNITIN**, which will be found on iLearn. Turnitin will take your details, including submission time, and check for plagiarism of your work to ascertain that it is all uniquely yours. All copied texts need to be in quotation marks and in-text citation as well as full bibliographic reference needs to be provided.

Late Submission Penalty

Unless a Special Consideration request has been submitted and approved, (a) a penalty for lateness will apply – two (2) marks out of 100 will be deducted per day for assignments submitted after the due date – and (b) no assignment will be accepted more than seven (7) days (incl. weekends) after the original submission deadline. No late submissions will be accepted for timed assessments – e.g. quizzes, online tests.

Assessment Tasks

Name	Weighting	Hurdle	Due
Participation	15%	No	ongoing
Book review	25%	No	Week 6
Weekly Quiz	20%	No	ongoing
Online Exam	40%	No	Open Sun 11th to Mon 12th Nov

Participation

Due: **ongoing**

Weighting: **15%**

5% attendance of online tutorials, 5% online attendance at lectures, 5% participation in online tutorials

On successful completion you will be able to:

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Book review

Due: **Week 6**

Weighting: **25%**

Summary of a book on the environment, chosen from the supplementary list or in consultation with your tutor (600 words); due Fri, Week 6.

Topic: Select one book on the environment from the supplementary list and do the following:

1. Identify and describe the book's topic
2. Summarise its contents, enlisting the most important ideas and discussion points in a

logical, coherent, structured way

Assessment criteria:

- Correct identification of topic and main points in your book
- Comprehension of the book's content and the overall quality of your writing

On successful completion you will be able to:

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- Appreciate the value of traditional ecological knowledge in re-thinking western notions of sustainability

Weekly Quiz

Due: **ongoing**

Weighting: **20%**

Weekly online quizzes will appear on iLearn from Week 2 to Week 11. These will incorporate weekly lecture topics and material from the weekly reading. Each quiz will be worth 2 points, adding up to 20% of your overall mark over 10 weeks. These will have to be completed within a set time period following the lectures.

On successful completion you will be able to:

- Explore and explain the historically changing relationships between society, science and the environment.
- Identify social, scientific, economic, political and ecological interdependencies
- Appreciate complexity and uncertainty in both everyday and political environmental decision making
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Online Exam

Due: **Open Sun 11th to Mon 12th Nov**

Weighting: **40%**

Online Exam (40%) A series of short essays. Date of the exam will be posted through the semester.

Exam will be open From Sunday 11th Nov. 8:00am until Monday 12th Nov. 11:55 pm

On successful completion you will be able to:

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Delivery and Resources

READINGS	
Week 1	There are no set readings for Week 1. Tutorials and set readings begin in Week 2. Please use this time to familiarise yourself with the Unit Guide and the assessment requirements for SOC254.
Week 2	<p>Martell, Luke, (1994), 'The Limits to Growth Thesis' in <i>Ecology and Society: An Introduction</i>, Polity Press, Cambridge: pp. 24-33. COMPULSORY</p> <p>Meadows, Donella (et. al.) (1972), 'Foreword,' and 'Introduction' in <i>The Limits to Growth: A Report for the Club of Rome's Project on the Predicament of Mankind</i>, Potomac Associates, London: pp. 9-12 & pp. 17-24. SUPPLEMENTARY</p> <p>Nolan, Patrick, Lenski, Gerhard, (2009), 'The Economies of Industrial Societies,' in Nolan, P. & Lenski, G., <i>Human Societies: An Introduction to Macrosociology</i> (11th ed.), Paradigm Publishers, Boulder & London, pp. 218-235 SUPPLEMENTARY</p>

Unit guide SOC 254 Science, Society and Environment

Week 3	<p>Pepper, David (1996), 'Pre-modern and Modern Ideas about Nature and Science – The Roots of Technocentrism,' in <i>Modern Environmentalism – An Introduction</i>, Routledge, London, pp. 124-148. COMPULSORY</p> <p>Williams, Malcolm. (2000), 'Where Did Science Come From?' in <i>Science and Social Science: An Introduction</i>, Routledge, London, pp. 8-27. SUPPLEMENTARY</p> <p>Merton, Robert K. (1973), 'The Normative Structure of Science' in <i>The Sociology of Science: Theoretical and Empirical Investigations</i>, The University of Chicago Press, London and Chicago, pp. 267-278. COMPULSORY</p> <p>Habermas, Jürgen (1971), 'Technology and Science as 'Ideology'' in <i>Toward a Rational Society: Student Protest, Science and Politics</i>, Heinemann, London, pp. 81-122 SUPPLEMENTARY</p>
Week 4	<p>Berkes, Fikret (1999), 'Context of Traditional Ecological Knowledge' and 'Toward a Unity of Mind and Nature,' in <i>Sacred Ecology: Traditional Ecological Knowledge and Resource Management</i>, Taylor & Francis, London: 3-14 and 163-183. COMPULSORY</p>
Week 5	<p>Etzkowitz, H. (2001), 'Science and Industry' in <i>International Encyclopedia of the Social & Behavioral Sciences</i>, Elsevier, London and Amsterdam: 13610-13614. COMPULSARY</p> <p>Larsen, M. T. (2011), 'The implications of academic enterprise for public science: An overview of the empirical evidence.' <i>Research Policy</i>, 40(1), 6-19. COMPULSARY</p>
Week 6	<p>Bulkeley, Harriet (2001), 'Governing Climate Change: The Politics of Risk Society?'. <i>Transactions of the Institute of British Geographers</i> 26(4): 430-447. COMPULSORY</p> <p>Irwin, Alan (2001), 'Sustainability as Social Challenge' in <i>Sociology and the Environment</i>, Polity, Oxford: 31-49. COMPULSORY</p>
Week 7	<p>Hannigan, J. A. (1995), 'Social Construction of Environmental Problems', in <i>Environmental Sociology – A Social Constructionist Perspective</i>, Routledge, New York: 38-57. COMPULSORY</p> <p>Williams, J. (1998), 'Knowledge, Consequences, and Experience: The Social Construction of Environmental Problems'. <i>Sociological Inquiry</i> 68(4), 476-497. SUPPLEMENTARY</p> <p>Xiang, W.-N. (2013), Working with wicked problems in socio-ecological systems: Awareness, acceptance, and adaptation. <i>Landscape and Urban Planning</i> 110, 1-4. COMPULSARY</p>
Week 8	<p>Haas, Peter M (2005), 'Science and international environmental governance' in <i>Handbook of Global Environmental Politics</i>, Edward Elgar Publishing, Cheltenham: 383-401. COMPULSORY</p> <p>Grundmann, Reiner (2007), Climate change and knowledge politics. <i>Environmental Politics</i> 16(3), 414-432. SUPPLEMENTARY</p>
Week 9	<p>Hannigan, J. A. (2006), 'Biodiversity loss' in <i>Environmental Sociology</i>, Routledge, New York: 122-135. COMPULSORY</p> <p>Chapin, S. F. et al. (2000), Consequences of changing biodiversity, <i>Nature</i> 405, 234-242. SUPPLEMENTARY</p> <p>IPBES (2016), 'The assessment report of the Intergovernmental Science-Policy Platform on Biodiversity and Ecosystem Services on pollinators, pollination and food production', Bonn: excerpt.</p>
Week 10	<p>Sage, C. (2011), <i>Environment and Food</i>, Routledge, London and New York: 14-20 and 146-169. COMPULSARY</p>
Week 11	<p>Alexandra, J. (2018), Evolving Governance and Contested Water Reforms in Australia's Murray Darling Basin. <i>Water</i> 10(2), 113-131. COMPULSORY</p> <p>Dovers, Steve (2008), 'Urban water: policy, institutions and governance', in <i>Troubled waters: confronting the water crisis in Australia's cities</i>, ANU E-Press, Canberra: 81-98. SUPPLEMENTARY</p>
Week 12	<p>Additional reading will be provided</p>

Week 13	Review of course material
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Unit Schedule

Week 1	Introduction – Key Concepts and Course Overview	James Dorahy
Week 2	Social Transformations and the Limits to Growth	James Dorahy
Week 3	Modernity, Science and the Technological Worldview	James Dorahy
Week 4	Where Do We Stand Today? The Consequences of Modernisation and the Return to Tradition.	James Dorahy
Week 5	Science and Industry	Marc Torka
Week 6	Environmental Science and Politics	Marc Torka
Week 7	Social Construction of Environmental Problems. A Framework for Case Studies	Marc Torka
Week 8	Climate Change	Marc Torka
Week 9	Biodiversity	Marc Torka
Week 10	Environment, Food and Health	Marc Torka
Week 11	Water	Marc Torka
Week 12	Recap	James Dorahy Marc Torka
Week 13	No lecture	-

Learning and Teaching Activities

Quizzes

Weekly online quizzes will appear on iLearn from Week 2 to Week 11. These will incorporate weekly lecture topics and material from the weekly reading. Each quiz will be worth 2 points, adding up to 20% of your overall mark over 10 weeks. These will have to be completed within a set time period following the lectures.

Policies and Procedures

Macquarie University policies and procedures are accessible from [Policy Central \(https://staff.mq.edu.au/work/strategy-planning-and-governance/university-policies-and-procedures/policy-central\)](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 \(https://students.mq.edu.au/support/study/student-policy-gateway\)](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 \(https://staff.mq.edu.au/work/strategy-planning-and-governance/university-policies-and-procedures/policy-central\)](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 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>) 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://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

Creative and Innovative

Our graduates will also be capable of creative thinking and of creating knowledge. They will be imaginative and open to experience and capable of innovation at work and in the community. We want them to be engaged in applying their critical, creative thinking.

This graduate capability is supported by:

Learning outcomes

- Explore and explain the historically changing relationships between society, science and the environment.
- Identify social, scientific, economic, political and ecological interdependencies
- Appreciate complexity and uncertainty in both everyday and political environmental decision making
- Understand the place of values in the production of knowledge and the way the environment is conceived
- Appreciate the value of traditional ecological knowledge in re-thinking western notions of sustainability

Assessment task

- Participation

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

- Explore and explain the historically changing relationships between society, science and the environment.
- Appreciate complexity and uncertainty in both everyday and political environmental decision making
- Understand the place of values in the production of knowledge and the way the environment is conceived

Assessment tasks

- Participation
- Book review
- Online Exam

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 outcomes

- Explore and explain the historically changing relationships between society, science and the environment.
- Appreciate complexity and uncertainty in both everyday and political environmental decision making
- Understand the place of values in the production of knowledge and the way the environment is conceived
- Appreciate the value of traditional ecological knowledge in re-thinking western notions of sustainability

Assessment tasks

- Book review
- Online Exam

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 historically changing relationships between society, science and the environment.
- Identify social, scientific, economic, political and ecological interdependencies
- Appreciate complexity and uncertainty in both everyday and political environmental decision making
- Understand the place of values in the production of knowledge and the way the environment is conceived
- Appreciate the value of traditional ecological knowledge in re-thinking western notions of sustainability

Assessment tasks

- Book review
- Weekly Quiz
- Online Exam

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

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- Identify social, scientific, economic, political and ecological interdependencies
- Appreciate complexity and uncertainty in both everyday and political environmental decision making
- Understand the place of values in the production of knowledge and the way the environment is conceived
- Appreciate the value of traditional ecological knowledge in re-thinking western notions of sustainability

Assessment tasks

- Book review
- Weekly Quiz
- Online Exam

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 historically changing relationships between society, science and

the environment.

- Identify social, scientific, economic, political and ecological interdependencies
- Appreciate complexity and uncertainty in both everyday and political environmental decision making
- Appreciate the value of traditional ecological knowledge in re-thinking western notions of sustainability

Assessment tasks

- Weekly Quiz
- Online Exam

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 outcomes

- Explore and explain the historically changing relationships between society, science and the environment.
- Appreciate complexity and uncertainty in both everyday and political environmental decision making
- Appreciate the value of traditional ecological knowledge in re-thinking western notions of sustainability

Assessment tasks

- Participation
- Online Exam

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 historically changing relationships between society, science and the environment.
- Identify social, scientific, economic, political and ecological interdependencies
- Appreciate complexity and uncertainty in both everyday and political environmental decision making
- Understand the place of values in the production of knowledge and the way the environment is conceived
- Appreciate the value of traditional ecological knowledge in re-thinking western notions of sustainability

Assessment task

- Participation

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 historically changing relationships between society, science and the environment.
- Identify social, scientific, economic, political and ecological interdependencies
- Appreciate complexity and uncertainty in both everyday and political environmental decision making
- Understand the place of values in the production of knowledge and the way the environment is conceived
- Appreciate the value of traditional ecological knowledge in re-thinking western notions of sustainability

Assessment tasks

- Book review
- Weekly Quiz
- Online Exam