
UNIVERSITY COLLEGE LONDON
SCIENCE AND GLOBAL CITIZENSHIP
COURSE OUTLINE

HPSC 2014 Autumn Term 2008	Course Convenor: Dr Jon Agar
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About this course

The aim of the module is to provide students with the knowledge and skills necessary to explore the opportunities for and responsibilities of citizens with respect to science-based decision-making processes of global significance. Particular reference will be made to global climate change debates.

Global climate change is the defining issue of our age. Policies that affect all communities in the world are made, and challenged, on the basis of scientific knowledge. Global climate change provides an ideal case study to explore the contribution and tensions of science in global political arenas. If we are all members of a global community then who should have a strong voice in decisions that affect that community, and how should these and other voices be heard? What are our rights and obligations as global citizens? Scientists can speak authoritatively on important global phenomena, but how should and how does scientific advice on global issues relate to broader political processes? Are scientists model global citizens, or are other models of citizenship just as, or more, pertinent? This course explores such questions, with special reference to global climate change.

By the end of this course you should possess:

- Knowledge of the history of the debate on anthropogenic climate change, with special reference to the roles of scientists and scientific advice
- Understanding of the routes to political engagement with respect to science-based decision making
- Skills, drawing from core STS literature, necessary to interpret science-based decision making in social and political contexts
- Citizen skills in written and spoken communication
- Citizen skills in relating personal experience to the ideas, tools and values of academic research
- Citizen skills in the recognition, collection and analysis of research materials
- Citizen skills in argumentation, listening and constructive dialogue
- Skills in advocacy and public communication

About the Science and Technology Studies (STS) Department

You are advised to familiarise yourself with the departmental *Student Handbook* and consult them on all procedural matters. The notes are available on the departmental web-site at <http://www.ucl.ac.uk/sts/>

Lectures

Lectures will take place on Tuesdays 10-11am (in Malet Place Eng 1.04) and Fridays 11-12 (Taverton 433) or 12-1pm (Foster Court 220).

Reading:

The notes that you take in lectures will *not* be detailed enough to understand a topic or to write an essay on that topic. It is therefore essential that you make use of the reading lists. **In essays you are expected read widely and to use (and make reference to) material in addition to that labelled essential reading.** You may use material that is not on the reading list but use all readings *critically* - you don't necessarily have to agree with everything you read.

The readings in this booklet are divided into three categories:

Seminar Reading

This is reading that you **MUST** have read by the time of the seminar. You should bring notes on the reading and be ready to discuss

Essential Examinable Reading

This is reading you **MUST** read before the exam. It contains material we will assume you are familiar with when answering examination questions

You will also want to read a particular week's literature if you have chosen to answer that question in an essay

Additional Reading for Essays

This is reading you **MIGHT** choose to read in planning or writing your essays.

Where to find the reading material

No one text covers this course. Most of the required and optional reading material is kept in the DMS Watson science library. There is also useful material kept in **Senate House Library** which you can use with a UCL Identity Card.

You are also encouraged to use the internet for research. However make sure you reference the full web address, the site title and date visited. Be critical of what you read. Be very careful of purely descriptive sites, such as Wikipedia – we are looking for *analysis* and *argument* in your essays not just re-hashing basic information. **Also note that plagiarism, particularly involving internet sources, will be treated as a severe exam irregularity.**

Attendance

We will meet twice a week. There will be either two lectures or one lecture and seminar each week. Attendance at **both** is a course requirement. Anyone who misses more than four lectures **or** seminars will be asked to provide an explanation via their tutor. Anyone who fails to provide an adequate documented explanation may be declared INCOMPLETE for the course.

Assessment

Short Essay 1, contributes 30% to final mark, 2000 words

Long Essay 2, contributes 40% to final mark, 3000 words,

Advocacy project, contributes 30% to final mark, 1000 words.

If you are not used to writing essays then you should also read chapter 5 of A. Northedge's *The Good Study Guide*.

The question to be answered in Short Essay 1 is: 'Trace the development of the science of global warming in the 20th Century. At what point did the evidence for global warming become strong? At what point did political action become justified and necessary? Justify your answers.'

The question to be answered in the Long Essay 2 is: 'Writing as a global citizen, choose and assess a specific strategy for either mitigation of climate change or adaptation to climate change'.

The details of the advocacy project will be given in class.

The due dates for the assignment are:

Short Essay 1	Monday November 7 th , 2008
Long Essay 2	Friday December 12 th , 2008
Advocacy Project	Monday November 17 th , 2008

Work should be handed in via the Turn-it-in system, as well as a hard copy to Dr Agar's pigeonhole; **no hard copy essay will be accepted unless accompanied by a completed Course Work Submission Sheet** (available from the departmental office). Do not e-mail coursework direct to us without prior permission.

Late essays will be penalized: up to one week late, five points will be deducted; up to two weeks late, eleven points will be deducted; **after two weeks essays will not be marked.**

Completion of the course requires that coursework assignments be submitted. Any student who has not completed all coursework assignments (abstract and essay) may be refused permission to sit the exam paper.

Schedule of Lectures and Seminars

Week	Slot One	Slot Two
1	Introduction to Course What is a Citizen?	Discussion of Citizenship and Climate Change. Six Degrees
2	History of Climate Change from First Thoughts to Cold War	History of Climate Change from Models to Politics
3	Comparable Global Debates	Watch: <i>An Inconvenient Truth</i>
4	Types of scientific citizenship Other Actions modeled on the IPCC: Agriculture	Reading the IPCC
5	Skeptics	Watch: <i>The Great Global Warming Swindle</i>
6	READING WEEK	
7	Advocacy Project Workshop (1)	Advocacy Project Workshop (2)
8	Mitigation: From Kyoto to the Stern Review	Discussion: Carbon Taxes Calculate your carbon footprint
9	Techno-fix (1) Carbon Capture and Storage	Discussion: the Kingsnorth 6
10	Techno-fix (2) Extreme Solutions	Discussion: Extreme Solutions
11	Adaptation: Natural and Human	Advocacy responses

General Background Reading

The following are good reference works.

Andrew E. Dessler and Edward A. Parson, *The Science and Politics of Global Climate Change: a Guide to the Debate*, Cambridge: Cambridge University Press, 2006. (Science Library: GEOGRAPHY E 61 DES)

Quite slim and up-to-date, with further reading.

Robert Henson, *The Rough Guide to Climate Change*, London: Rough Guides, 2006 (Science Library: GEOGRAPHY E 61 HEN)

Surprisingly good. Organised by symptoms, science, and solutions.

Steve Rayner and Elizabeth L. Malone (eds.), *Human Choice and Climate Change*, Columbus: Battelle, 1998. (Science Library: GEOGRAPHY E 61 RAY)

A four volume collection of essays examining climate change from a social science perspective.

Volume 1: The societal framework; Volume 2: Resources and technology;
Volume 3: The tools for policy analysis; Volume 4: What have we learned?

Nicholas Stern, *The Economics of Climate Change: the Stern Review*, Cambridge: Cambridge University Press, 2007. (Science Library: GEOGRAPHY H 72 STE; other copies elsewhere; also online via library catalogue)

From an economics perspective.

William James Burroughs, *Climate Change: a Multidisciplinary Approach*, Cambridge: Cambridge University Press, 2007.. GEOGRAPHY E 68 BUR

A science textbook approach

The following are popular science/science journalism books

Elizabeth Kolbert, *Field Notes from a Catastrophe: a Frontline Report on Climate Change*, London: Bloomsbury, 2007

Follows scientists around. Publisher would like this to be *Silent Spring de jours*.

Fred Pearce, *The Last Generation: How Nature Will Take Her Revenge for Climate Change*, London: Transworld, 2007 and *With Speed and Violence: Why Scientists Fear Tipping Points in Climate Change*, Boston: Beacon Press, 2007 (GEOGRAPHY E 61 PEA)

The same text, packaged for different audiences. The first is gaudy pulp non-fiction, the second is restrained and artful.

Mark Lynas, *Six Degrees: Our Future on a Hotter Planet*. London: Harper Perennial, 2007 (Science Library: GEOGRAPHY E 61 LYN)

A nice conceit: what difference does each degree warmer make?

Tim Flannery, *The Weather Makers: Our Changing Climate and What It Means for Life on Earth*, London: Penguin, 2005.

From the Oz scientist and science writer.

Week 1 Slot 1
(30th September 2008)
Lecture: What is a Citizen?

Introduction to the course.

What is a citizen? What is a global citizen? What is scientific citizenship? What is scientific global citizenship? What is global citizenship about science?

Essential Examinable Reading

Melissa Leach and Ian Scoones, 'Science and citizenship in a global context' in Melissa Leach, Ian Scoones and Brian Wynne (eds.), *Science and Citizens: Globalization and the Challenge of Engagement*, London: Zed Books, 2005, pp.15-38.

Distinguishes between liberal, communitarian, and civic republican perspectives. This is an edited collection of fairly advanced scholarly papers on citizenship, mostly from an STS perspective.

Background Reading

Gerard Delanty, *Citizenship in a Global Age: Society, Culture, Politics*, Buckingham: Open University Press, 2000

Good survey of citizenship

Nigel Dower, *An Introduction to Global Citizenship*, Edinburgh: Edinburgh University Press, 2003

Week 1 Slot 2
(3rd October 2008)
Seminar: Types of Citizenship; Six Degrees of Change

Discussion of types of citizenship as applied to climate change

Let's Get Scared: Discussion of the Six Degrees

Essential Seminar Reading

Nigel Dower, *An Introduction to Global Citizenship*, Edinburgh: Edinburgh University Press, 2003, pp.3-49. (Made available in Week 1 Slot 1)

Answer the questions Dower poses at the end of each chapter.
Note down any thoughts you might have about how citizenship might relate to science in general and climate change science in particular.

One degree each from Mark Lynas, *Six Degrees; Our Future on a Hotter Planet*. London: Harper Perennial, 2007 (Science Library: GEOGRAPHY E 61 LYN)

Lynas is a journalist and science writer. This popular book is a prediction of what the world would be like assuming global warming from one to six degrees.

Background Reading

Jeroen van der Sluijs, Josee van Eijndhoven, Simon Shackley and Brian Wynne, 'Anchoring devices in science for policy: the case of consensus around climate sensitivity', *Social Studies of Science* 28(2) (1998), pp.291-323.

A sociology of science analysis on how the same degree range survives rapidly changing climate science.

Week 2 Slot 1
(7th October 2008)

Lecture: History of Climate Change from First Thoughts to Cold War

How was it recognised that global climate could change? What were the arguments and theories? How did research programs in the Cold War produce evidence, such as the Keeling Curve. What was the contribution of computers?

Background Reading

Spencer R. Weart, *The Discovery of Global Warming*, Cambridge, MA: Harvard University Press, 2003. (Science Library: HISTORY OF SCIENCE Y 710 WEA and GEOGRAPHY E 61 WEA)

This is a good history of global warming from a history of science perspective. The relevant chapters for this week are: 'Chapter One: How Could Climate Change?', 'Chapter Two: Discovering a Possibility', 'Chapter Three: A Delicate System' and 'Chapter Four: a Visible Threat'

James Rodger Fleming, 'Global environmental change and the history of science' in Mary Jo Nye (ed.), *The Cambridge History of Science. Volume 5: The Modern Physical and Mathematical Sciences*, Cambridge: Cambridge University Press, 2003, pp.634-650 (Science Library: HISTORY OF SCIENCE M 5 CAM)

Paper reviewing global climate change from a history of science perspective. Contains more enlightenment discussion than Weart.

James Rodger Fleming, *Historical Perspectives on Climate Change*, Oxford: Oxford University Press, 1998. (Science Library: GEOGRAPHY E 61 FLE)

Covers the above, but at greater length and depth.

David M. Hart and David G. Victor, 'Scientific elites and the making of US Policy for climate change research, 1957-74', *Social Studies of Science* 23(4) (1993), pp.643-680.

Week 2 Slot 2
(10th October 2008)
Lecture: History of Climate Change from Models to Politics

Modelling a complex, delicately balanced system. The emergence of climate change as a political topic. How does scientists portray uncertainty when advising politicians. The lecture will take us up to the Kyoto agreement of 1997.

Background Reading

Spencer R. Weart, *The Discovery of Global Warming*, Cambridge, MA: Harvard University Press, 2003. (Science Library: HISTORY OF SCIENCE Y 710 WEA and GEOGRAPHY E 61 WEA)

The relevant chapters for this week are: 'Chapter Five: Public Warnings', 'Chapter Six: the Erratic Beast', 'Chapter Seven: Breaking into Politics' and 'Chapter Eight: the Discovery Confirmed'

Simon Shackley and Brian Wynne 'Representing uncertainty in global climate change science and policy: boundary-ordering devices and authority', *Science, Technology and Human Values* 21(3) (1996), pp.275-302 (Available via electronic journals)

On scientists' treatment of uncertainty when on the boundary of science and politics.

Clark Miller, 'Hybrid management: boundary organizations, science policy, and environmental governance in the climate regime', *Science, Technology and Human Values* 26(4) (2001) pp.478-500.

Continues the boundary organisation analysis.

Arthur C. Petersen 'Review: models as technological artefacts', *Social Studies of Science* 30(5) (2000), pp.793-799.

Review of several recent STS books on modelling, including *Human Choice and Climate Change* by Steve Rayner and Elizabeth L. Malone

Week 3 Slot 1
(14th October 2008)
Comparable Global Debates

Global warming is not the first debate about the global scale that has depended crucially on disputed scientific expertises. In this lecture we look at three other comparable global debates: the explosive arguments of the Population Bomb, the controversy around the claims of the Club of Rome's *Limits to Growth*, and the effects of CFCs on the ozone layer. What roles did scientists and citizens play in the opening and resolution of these debates?

Essential Examinable Reading

David Demeritt, 'The construction of global warming and the politics of science', *Annals of the Association of American Geographers* 91(2) (2001), pp.307-337.

Argues that climate change debate has been framed as science-led and global, which has encouraged technocratic solutions, which may not be the best ones.

Background Reading

Paul R. Ehrlich, *The Population Bomb*, New York: Ballantine Books, 1968. (Science Library: GEOGRAPHY H 40 EHR)

This is Ehrlich's original book.

Donella H. Meadows et al, *The Limits to Growth: a Report for the Club of Rome's Project on the Predicament of Mankind*, London: Earth Island, 1972. (Science Library: GEOGRAPHY H 72 MEA)

This is the Club of Rome's original book.

Edward A. Parson, *Protecting the Ozone Layer: Science and Strategy*, Oxford: Oxford Scholarship Online, 2003. (Available online via library catalogue)

'Offers the first comprehensive history of international efforts to protect the ozone layer by abandoning the use of chlorofluorocarbons (CFCs), and underlines that this is the greatest success yet achieved in managing human impacts on the global environment'

Maureen Christie, *The Ozone Layer: a Philosophy of Science Perspective*, Cambridge: Cambridge University Press, 2001. (Science Library HISTORY OF SCIENCE W 80 CHR and GEOGRAPHY E 61 CHR)

If you want some philosophy of science.

Week 3 Slot 2
(17th October 2008)
Film: *An Inconvenient Truth*

Al Gore's powerpoint slides turned into an award-winning documentary film, *An Inconvenient Truth* (2006)

Background Reading

Albert Gore, *An Inconvenient Truth: the Planetary Emergency of Global Warming and What We Can Do About It*, London: Bloomsbury, 2006..

The book of the film of the powerpoint presentation

<http://www.bailii.org/ew/cases/EWHC/Admin/2007/2288.html>

The judge's ruling in the court case Dimmock v Secretary of State for Education & Skills (10 October 2007) on "errors" in AIT.

http://www.medialens.org/alerts/07/071017_red_herring_al.php

An interesting blog recording and commenting on media presentation of the Dimmock case

Week 4 Slot 1
(21st October 2008)
Lecture: Types of Scientific Citizenship

There are many ways science can be deployed in citizen action. This lecture focuses on three types of scientific citizenship: 1) The individual as scientific citizen activist (for example Rachel Carson) 2) Pressure groups as scientific citizen (for example, how does Greenpeace use science?), and 3) Collective science as scientific citizen, with the model case study of the International Panel on Climate Change. If there is time we will also look at other programs built on the IPCC model.

Background Reading

Linda J. Lear, *Rachel Carson: Witness for Nature*, New York: Henry Holt, 1997.

Biography of Carson.

M. Huxham, and D. Sumner, 'Emotion, science and rationality: the case of the Brent Spar', *Environmental Values* (1999) 8(3), pp.349-368.

Some useful analysis of the Brent Spar case.

Bert Bolin, *A History of the Science and Politics of Climate Change*, Cambridge: Cambridge University Press, 2007

Insider's view. Bolin was chair of the IPCC from 1988 to 1997.

Week 4 Slot 2
(24th October 2008)
Reading the IPCC

This seminar discusses the reports of the IPCC.

Essential Seminar Reading

Climate Change 2007: Synthesis Report. Available at:
<http://www.ipcc.ch/ipccreports/ar4-syr.htm>

And browse one of the other reports, available either via:

<http://www.ipcc.ch/index.htm>

or via the Science Library:

J.T. Houghton, G.J. Jenkins, and J.J. Ephraums (eds.) *Intergovernmental Panel on Climate Change: Climate change: the IPCC scientific assessment*, Cambridge: Cambridge University Press, 1990. (Science Library: GEOGRAPHY QUARTOS E 61 HOU)

James P. Bruce, Hoesung Lee, Erik F. Haites (eds.) *Climate Change 1995: Economic and Social Dimensions of Climate Change*, Cambridge: Cambridge University Press, 1996. (Science Library: GEOGRAPHY QUARTOS E 61 BRU; Main library PUBLIC POLICY QUARTOS QC 981.8.C5 CLI)

J.T. Houghton (ed.) *Climate Change 1995: the Science of Climate Change*, Cambridge: Cambridge University Press, 1996. (Science Library: GEOGRAPHY QUARTOS E 61 HOU)

Robert T. Watson and the Core Writing Team (eds.) *Climate Change 2001: Synthesis Report*, Cambridge: Cambridge University Press, 2001. (Science Library: GEOGRAPHY E 61 WAT)

Bert Metz et al (eds.), *Climate Change 2001: Mitigation: Contribution of Working Group III to the Third Assessment Report of the Intergovernmental Panel on Climate Change*, Cambridge: Cambridge University Press, 2001. (Science Library: GEOGRAPHY QUARTOS E 61 MET)

J.T. Houghton et al (ed.), *Climate Change 2001: the Scientific Basis: Contribution of Working Group I to the Third Assessment Report of the Intergovernmental Panel on Climate Change*, Cambridge: Cambridge University Press, 2001. (Science Library: GEOGRAPHY QUARTOS E 61 HOU)

James J. McCarthy et al (eds.), *Climate Change 2001: Impacts, Adaptation, and Vulnerability: Contribution of Working Group II to the Third Assessment Report of the Intergovernmental Panel on Climate Change*, Cambridge: Cambridge University Press, 2001. (Science Library: GEOGRAPHY QUARTOS E 61 MCC)

Bert Metz et al (eds.), *Climate Change 2007: Mitigation of Climate Change: Contribution of Working Group III to the Fourth Assessment Report of the Intergovernmental Panel on Climate Change*, Cambridge: Cambridge University Press, 2007. (Science Library: GEOGRAPHY QUARTOS E 61 MET)

Martin Parry et al (eds.), *Climate Change 2007: Impacts, Adaptation and Vulnerability*, Cambridge: Cambridge University Press, 2007 (Science Library: GEOGRAPHY E 68 PAR)

Susan Solomon et al (eds.), *Climate Change 2007: the Physical Science Basis: Contribution of Working Group I to the Fourth Assessment Report of the Intergovernmental Panel on Climate Change*, Cambridge: Cambridge University Press, 2007. (Science Library: GEOGRAPHY QUARTOS E 61 SOL)

Week 5 Slot 1
(28th October 2008)
Skeptics

Skeptics have challenged the emerging consensus that climate change is real and dangerous. Are they an essential part of the scientific process? Or are they an organised attempt by vested interests to divert attention? Or something else?

Bjørn Lomborg, *The Skeptical Environmentalist: Measuring the Real State of the World*, Cambridge: Cambridge University Press, 2001 (Science Library: GEOGRAPHY H 72 LOM, plus other copies elsewhere)

Lomborg's book was published in Danish in the late 1990s and has been challenged ever since.

<http://www.mylinkspage.com/lomborg.html>

Essential Examinable Reading. Read Lomborg's Guardian articles (section 2 in the above website), which summarise his views in accessible form. Then read the responses from scientists in section 5. Browse the other reactions.

<http://www.grist.org/advice/books/2001/12/12/short/>

Lots more links to commentary on Lomborg's *Skeptical Environmentalist*, mostly critical.

Bjørn Lomborg, *Cool It: the Skeptical Environmentalist's Guide to Global Warming*, London: Marshall Cavendish, 2007. (Science Library: GEOGRAPHY E 61 LOM)

Lomborg's latest.

S. Fred Singer and Dennis T. Avery, *Unstoppable Global Warming: Every 1500 Years*, Lanham: Rowman & Littlefield Publishers, 2006. (Science Library: GEOGRAPHY E 61 SIN)

Fred Singer is one of the main climate change sceptic scientists.

Christopher Booker and Richard North, *Scared to Death: From BSE to Global Warming – How Scares are Costing Us the Earth*, London: Continuum, 2007. (Not in Library: ask JA)

'Chapter 14: Saving the Planet: Global Warming: the New Secular Religion' is an epitome of climate change rubbish.

Ian H. Rowlands 'Beauty and the beast? BP's and Exxon's positions on global climate change', *Environment and Planning C: Government and Policy* 18(3) (2000), pp.339–354 (Available via electronic journals)

Exxon is actively resisting conclusions that the climate is changing, while BP Amoco is more open to the idea. Why the difference?

Andrew E. Dessler and Edward A. Parson, *The Science and Politics of Global Climate Change: a Guide to the Debate*, Cambridge: Cambridge University Press, 2006. (Science Library: GEOGRAPHY E 61 DES)

'Chapter 5: The present impasse and steps forward' outlines and criticises skeptics' arguments and evidence.

Week 5 Slot 2
(31st October 2008)
Film: *The Great Global Warming Swindle*

Channel 4 has a history of anti-climate change programming. We will watch Martin Durkin (director), *The Great Global Warming Swindle*, 2007.

Background Reading

<http://www.greatglobalwarmingswindle.com/>

'Check out the science behind this film'

George Monbiot, 'A crusade against science', *The Guardian* 22 September 2008

Traces Channel 4's 'shameful history of misleading its viewers on global warming'. See also his op-ed piece 'Our craving for deception' which argues that its the fault of the 'well-off'

Week 6
READING WEEK

**Week 7 Slot 1
(11th November 2008)
Advocacy Project Workshop 1**

Discussion: Who should the target of your advocacy?

**Week 7 Slot 2
(14th November 2008)
Advocacy Project Workshop 2**

Workshop: Writing and discussing advocacy.

Week 8 Slot 1
(18th November 2008)
Mitigation: From Kyoto to the Stern Review

The Kyoto Protocol (1997) is an international agreement, an aspect of the United Nations Framework Convention on Climate Change. It sets binding targets for industrialized countries for reducing greenhouse gas emissions. The United States did not ratify the treaty. Challenges to Kyoto. The economist's view of climate change: the Stern Review.

Essential Examinable Reading

Andrew E. Dessler and Edward A. Parson, *The Science and Politics of Global Climate Change: a Guide to the Debate*, Cambridge: Cambridge University Press, 2006. (Science Library: GEOGRAPHY E 61 DES)

‘Chapter 4: the climate-change policy debate: impacts and potential responses’ reviews different ways of mitigating or adapting to climate change

Background Reading

http://unfccc.int/kyoto_protocol/items/2830.php

The text of the Kyoto protocol can be found here.

Aaron M. McCright and Riley E. Dunlap ‘Defeating Kyoto: the conservative movement’s impact on U.S. climate change policy’, *Social Problems* 50(3) (2003), pp.348-373 (Available via electronic journals)

How conservative think-tanks turned climate change into a “non-problem”.

Sonja Boehmer-Christiansen, ‘Science, equity, and the war against carbon’, *Science, Technology and Human Values* 28(1) (2003), pp.69-92.

Argues that the decarbonisation envisaged by the Kyoto treaty is more likely to provoke political instability than prevent climate change.

Nicholas Stern, *The Economics of Climate Change: the Stern Review*, Cambridge: Cambridge University Press, 2007. (Science Library: GEOGRAPHY H 72 STE; other copies elsewhere; also online via library catalogue)

Essential Examinable Reading: ‘Summary of Conclusions’, p.xv-xix.

Week 8 Slot 2
(21st November 2008)
Discussion: Carbon Taxes and Carbon Footprints

Carbon taxes are a policy for getting governments and large companies to respond to climate change. Carbon footprints are a measuring and comparing the impacts of both individuals and organisations.

Essential Seminar Work

<http://actonco2.direct.gov.uk/index.html>

Calculate your carbon footprint using the UK Government's Act on CO2 Calculator. Record your thoughts about the process and the conclusions. Use the FAQs to find out what data was used in the calculation.

Background Reading

Nicholas Stern, *The Economics of Climate Change: the Stern Review*, Cambridge: Cambridge University Press, 2007. (Science Library: GEOGRAPHY H 72 STE; other copies elsewhere; also online via library catalogue)

‘Chapter 15: Carbon Pricing and Emissions: Markets in Practice’

Week 9 Slot 1
(25th November 2008)
Technofix (1): Carbon Capture and Storage

Carbon capture and storage (CCS) are technologies whereby carbon dioxide (such as that produced by coal-burning power stations) is captured and stored, often underground. Several fairly experimental projects are already underway.

Background Reading

IPCC, *Carbon Dioxide Capture and Storage*, Cambridge: Cambridge University Press, 2005. (Available online at <http://www.ipcc.ch/ipccreports/srccs.htm>)

An IPCC Special Report. Long.

<http://www.co2storage.org.uk/>

A UK consortium of researchers, including academics and the British Geological Society.

<http://www.greenpeace.org/raw/content/usa/press-center/reports4/false-hope-why-carbon-capture.pdf>

Greenpeace is sceptical.

Nicholas Stern, *The Economics of Climate Change: the Stern Review*, Cambridge: Cambridge University Press, 2007. (Science Library: GEOGRAPHY H 72 STE; other copies elsewhere; also online via library catalogue)

‘Chapter 16: Accelerating Technological Innovation’ discusses the economics of R&D in this area.

‘Chapter 17: Beyond Carbon Markets and Technology’ considers some alternative policies

James Lovelock, *The Revenge of Gaia*, London: Allen Lane, 2006

The original Gaia scientist. ‘Chapter Five: Sources of Energy’ argues that a new nuclear program is essential part of any technological fix.

Week 9 Slot 2
(28th November 2008)
Discussion: the Kingsnorth 6

In summer 2008 a Camp for Climate Action event was held close to Kingsnorth Power Station near Hoo, Kent. Greenpeace activists protesting against the power station were cleared in a court-case that some see as having implications for further activism.

Essential Seminar Reading

‘Climb every chimney...’, ‘Beyond all reasonable doubt’ and ‘If I was E.On or owned an airport, I’d be very, very worried’, *The Guardian*, 12 September 2008

On the Kingsnorth decision. Best way to access them is to go to www.guardian.co.uk and search for ‘Kingsnorth’

Background Reading

Dale Jamieson, ‘Ethics, public policy, and global warming’, *Science, Technology and Human Values* 17(2) (1992), pp.139-153. (Available via library catalogue)

Bit old, but argues that global warming needs widespread acceptance of new moral values.

Week 10 Slot 1
(2nd December 2008)
Technofix (2): Extreme Solutions

Geo-engineering is the deliberate attempt to intervene on a global scale to combat climate change using technological fixes. Are such extreme solutions a necessary emergency policy, or a consequence of precisely the technocratic thinking that has caused the problem in the first place?

Background Reading

Philosophical Transactions of the Royal Society A: Mathematical, Physical and Engineering Sciences, Theme Issue 'Geoscale engineering to avert dangerous climate change' compiled by Brian Launder and J. Michael T. Thompson. Online Date Friday, August 29, 2008. (Accessible from UCL computers)

Lots of geo-engineering proposals and discussion. In particular, see the Essential Examinable Reading: Stephen Schneider's introductory essay 'Geoengineering: could we or should we make it work?' at <http://journals.royalsociety.org/content/Int0676gl7302372/fulltext.html>

Week 10 Slot 2
(5th December 2008)
Discussion: Extreme Solutions

Essential Seminar Reading

Jim Thomas and Paul Fitzgerald, 'Technofixes: Climate Solution or Corporate Scam?', in *New Internationalist* (August 2008), pp.22-24.
<http://www.newint.org/features/special/2008/08/01/technofixes/>

Do you agree with Jim or Paul?

Week 11 Slot 1
(9th December 2008)
Adaptation: Natural and Human

Essential Seminar Reading

<http://www.defra.gov.uk/environment/climatechange/adapt/index.htm>

Read the four sections ('Understanding adaptation', 'Adaptation in the Climate Change Bill', 'Adapting to climate change programme' and 'Taking action'). Make notes on what adaptation actions and being taken, and whether you consider them adequate or inadequate.

Background Reading

Nicholas Stern, *The Economics of Climate Change: the Stern Review*, Cambridge: Cambridge University Press, 2007. (Science Library: GEOGRAPHY H 72 STE; other copies elsewhere; also online via library catalogue)

'Part Five: Policy Responses for Adaptation'

Week 11 Slot 2
(12th December 2008)
Advocacy Responses

Advocacy responses and results. Concluding thoughts and comments.