

Principles of Environmental Sustainability [PGGE11060]

20 credits, Semester 1, 2016/7

Course Organiser

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Who should take this course?

- MSc Environmental Sustainability students (core course).
- MSc students, from other programmes in the School of GeoSciences, who are interested in gaining a broad and holistic understanding of sustainable development (optional course). Particularly suitable for students wishing to work in government, local authorities, environmental consultancy, or environmental NGOs.
- Students from outside GeoSciences, if listed as an option in their DPT (e.g. MSc Global Environment, Politics and Society, MSc Global Environment and Climate Change Law).

Summary

The course is designed to identify and explore the principles that are widely recognised to form the core of sustainable development, and to investigate the extent of the environmental issues currently faced by society. It also aims to examine the underlying driving forces for environmental change, in terms of population growth, technological change, market economics and consumption patterns. The course encourages a strongly interdisciplinary approach to the understanding of sustainable development and seeks to foster critical thinking and debate.

Assessment Details

The course is assessed by coursework (50%) and examination (50%):

- Coursework:
2,000-word essay to be submitted by Wednesday 9 November (50% of course mark).
- Examination:
Answer two one-hour essay questions, from a choice of five (each answer is worth 25% of course mark); examination to be held during the period Thursday 8 to Wednesday 21 December 2016 (exact date to be published by Student Administration on 27 October).

The *Learn* virtual learning environment will be used for electronic submission of coursework. The *Turnitin* software system will be used to scan each essay to detect any plagiarism.

Time and Venue

All sessions will be held in the Crew Building Annexe, Room 4, 09:00-13:00 on Fridays. The Crew Building Annexe is a single storey suite of classrooms immediately to the north of the Crew Building, which is located at The King's Buildings campus. The location of the Crew Building is shown at: <http://www.ed.ac.uk/maps/maps?building=crew-building>.

FIRST MEETING: 09:00-13:00 Friday 23 September, Room 4, Crew Building Annexe

Course Description

Date	Outline
Sep 23	<p>1. Introduction. What is sustainable development?</p> <p>In the first class the objectives, structure and approach of the course are outlined. We begin by briefly reviewing the rise of environmental concern since 1950. Some core principles of sustainable development are introduced, with an account of how they were elaborated through international policy processes.</p> <p><i>To prepare for the class discussion, please read the document at:</i> http://www.geos.ed.ac.uk/~sallen/pes/definitions_of_SD_2016.pdf</p>
Sep 30	<p>2. Conflicting worldviews of environment and development</p> <p>We examine debates surrounding sustainable development, and consider what underlies them. Disagreement can often be traced back to differing worldviews, particularly regarding forms of development and understandings of how nature works.</p>
Oct 7	<p>3. Sustainability indicators and the integration principle</p> <p>We consider the need to integrate decision-making in environmental, economic and social spheres to make development more sustainable. Integrated policy making requires information to monitor the state of society, economy and environment – we examine various ‘sustainability indicators’ that have been designed for this purpose.</p>
Oct 14	<p>4. Environmental limits and the sustainability principle</p> <p>We examine whether there are environmental limits to the scale of the human economy. What evidence is there that limits are being approached and where do they lie? James Lovelock’s Gaia hypothesis is introduced as a way of understanding how humanity depends upon the activities of organisms on Earth to maintain stable and habitable conditions. We consider the ‘services’ provided by biodiversity and the arguments for its protection.</p>
Oct 21	<p>5. Climate change and the precautionary principle</p> <p>We consider the development and application of the precautionary principle, with a focus on climate change. What are the risks that humanity faces, and what level of precaution should be applied in attempts to manage them? ‘Geo-engineering’ as a possible technique to ‘fix’ the climate is examined as a case study.</p>
Oct 28	<p>NO CLASS</p> <p>Mid-semester break for reading and reflection.</p>
Nov 4	<p>6. Population, consumption and the equity principle</p> <p>We examine the interplay between population trends and patterns of consumption in determining humanity’s impact on the biosphere. Evidence of the scale of current global inequity is reviewed. Why do intra- and inter-generational equity matter to sustainable development and how can they be ensured?</p>
Nov 11	<p>7. The market and the polluter pays principle</p> <p>In Northern industrialised economies, decisions about the allocation of resources have increasingly been left to market processes, yet these often lead to pollution and over-exploitation of natural resources. We consider how and why the market fails. The ‘polluter pays’ principle allows some failures to be corrected. We also debate the role of economic growth in sustainable development – is it a requirement or an impediment?</p>

Date	Outline
Nov 18	<p>8. Engaging communities and the participation principle</p> <p>Processes of community participation in decisions that shape people's lives are essential to sustainable development. We explore why, focusing on contemporary debates surrounding participation in land use decision-making in the UK and further afield.</p> <p><i>Guest speaker: Emily Creamer, Postdoctoral Research Associate, School of GeoSciences</i></p>
Nov 25	<p>9. Envisioning a sustainable future</p> <p>We consider what a future sustainable society might look like. Will we live much as now, but with electric cars and renewable energy, or will society shift towards more localized and resilient ways of living, with reduced levels of consumption of energy and materials? How will the quality of our lives change? What can we gain and what might we lose? This class is a chance for students to explore possible pathways towards sustainability and their implications.</p>
Dec 2	<p>10. Feedback and exam preparation</p> <p>An opportunity for students to reflect on the course as a whole and provide feedback. Group discussion will be used to assist in preparation for the examination.</p>

Learning Outcomes

On completion of this course, the student will be able to:

1. Understand the evolution of sustainable development and its contested meanings
2. Engage more widely and deeply with relevant literatures
3. Critically assess arguments and knowledge claims related to sustainability
4. Link knowledge from different disciplines to gain insight into complex issues
5. Articulate the core principles of sustainable development

Useful Textbooks

There is no textbook that covers the whole course, as a result of its broad, interdisciplinary approach. A detailed reading list will therefore be provided each week. Wherever possible, readings will be made available to students online, via *Learn*.

The books listed below are relevant to the course, and will be referred to in some of the lectures. Beder (2006) will be referred to most extensively, as Chapters 1 to 6 clearly set out the most important principles of sustainable development. Dresner (2008) considers the evolution and meaning of sustainable development and therefore provides a solid grounding for the first two sessions of the course. Blewitt (2014) and Robertson (2014) are general introductory texts on sustainability covering a wide range of relevant topics, while Middleton (2013) gives somewhat stronger emphasis to the natural sciences. Hulme (2009), Jackson (2011) and Wilkinson and Pickett (2010) are recent books that have each made significant and distinctive contributions to the sustainable development debate, and should therefore be of interest to students of this course.

Reading List

- Beder, S. (2006). *Environmental Principles and Policies. An Interdisciplinary Introduction*. Earthscan, London. ISBN: 1844074048.
- Blewitt, J. (2014). *Understanding Sustainable Development, Second Edition*. Routledge, Abingdon. ISBN: 9780415707824.
- Dresner, S. (2008). *The Principles of Sustainability, Second Edition*. Earthscan, London. ISBN: 9781844074969.
- Hulme, M.M. (2009). *Why We Disagree About Climate Change: Understanding Controversy, Inaction and Opportunity*. Cambridge University Press, Cambridge. ISBN: 9780521727327.

- Jackson, T. (2011). *Prosperity Without Growth: Economics for a Finite Planet*. Earthscan, London. ISBN: 9781849713238.
- Middleton, N. (2013). *The Global Casino: An Introduction to Environmental Issues*, Fifth Edition. Routledge, Abingdon. ISBN: 9781444146622.
- Robertson, M. (2014). *Sustainability Principles and Practice*. Routledge, Abingdon. ISBN: 9780415840187.
- Wilkinson, R.G., and Pickett, K. (2010). *The Spirit Level: Why Equality is Better for Everyone*. Penguin, London. ISBN: 9780241954294.