

Applications in Ecological Economics

Course co-ordinator: Salman Hussain

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Course Aims

- Examine the links between economic and ecological systems in order to enhance economic and environmental policy;
- Apply ecological economic tools and approaches to solve real world environmental problems;
- Examine alternative approaches to the traditional neo-classical economic view of human interaction with the environment.

Course outline

Week 1 10 January

COURSE INTRODUCTION AND TEEB

Salman Hussain

After the course introduction/administration/perspective-setting, this session considers the systems approach and outlines the the modelling carried out for the UNEP project termed 'The Economics of Ecosystems and Biodiversity'.

WEEKS 2-5 ECOLOGICAL ECONOMIC MODELLING

Week 2: 17 January

ECOLOGICAL ECONOMICS COMPUTER-BASED MODELLING: THEORY

Andrew Barnes

The first of the two sessions on computer-based applications of EE modelling sets out the theoretical perspective and the underpinning assumptions around computer-based modelling.

Week 3: 24 January

ECOLOGICAL ECONOMICS COMPUTER-BASED MODELLING: APPLICATION

Andrew Barnes

The second of the two sessions on computer-based applications of EE modelling is based in the computing lab where students will gain hands-on experience of applying such models.

Session scheduled to take place in computer lab room 131, SAC building.

Week 4: 31 January

BIO-ECONOMIC MODELLING: INTRODUCTION TO FISHERIES ECONOMICS

Salman Hussain

This is the first of two sessions introducing the principles and applications of bio-economic modelling. The focus is on the changes that different property rights regimes have on optimal extraction.

Week 5: 7 February

BIO-ECONOMIC MODELLING AND THE ECOSYSTEM APPROACH

Salman Hussain

This session follows on from the previous one but also considers how 'food provisioning' as an ecosystem service can and has been linked with other ecosystem services. This is discussed with reference to the Millennium Assessment and the UK Marine and Coastal Access Bill.

WEEK 6: 14 February

STUDENT GROUP PRESENTATIONS

WEEKS 7-10: MICRO LEVEL APPLICATIONS IN ECOLOGICAL ECONOMICS

Week 7 21 February

Q-METHOD: THEORY

Clare Hall

Q-method is a relatively novel approach applied to evaluate individual preferences. Weeks 7-9 will entail seeing an application tool being applied in the class. Week 7 presents the theoretical underpinning

Weeks 8 28 February

Q-METHOD: IN-CLASS APPLICATION I

Clare Hall, Christos Zografos

The class will be split into two with each sub-group being led by a researcher in Q-Method. This class will apply the earlier methodological stages of a Q-application.

Week 9: 7 March

Q-METHOD: IN-CLASS APPLICATION II

Clare Hall, Christos Zografos and Claudio Cattaneo

The latter methodological stages will be carried out in the same sub-groups as Week 8, and results and discussions will be presented by each sub-group.

Week 10: 14 March

MULTI-CRITERIA ANALYSIS

Claudio Cattaneo

This session explores Multi-Criteria Analysis (MCA) as an environmental policy decision-making framework alternative to Cost-Benefit Analysis (CBA). The main theoretical and methodological features of MCA are discussed and a case study of MCA application is presented.

WEEK 11: DISSERTATIONS

This class will focus on how the methods covered in the course might be applied for the dissertation project.

Assessments

There is no examination for the course. There are two assessments. Please upload submissions to WebCT and also hand in a hard copy to Frances Stratford, SAC Building.

Assignment 1 (60%)

“A critical review of methodological tools within ecological economics used to address [a defined environmental issue]: a case study of [insert case study]”

Define the problem and then critically appraise what tools can be applied. Again Ecological Economics will be full of case studies.

- Issues of efficiency, equity and sustainability are to be evaluated for each chosen assignment topic
- A case study/case studies is/are to be presented in the essay
- The ‘defined environmental issue’ is to be one from the list below:
 1. water resource management
 2. soil management
 3. air quality management
 4. deforestation
 5. desertification
 6. greenhouse gas mitigation
 7. adaptation to climate change
 8. ozone depletion
 9. species introductions

Weighting: 60% of final course mark

Hand-in date: Monday 21 February 2011 9.30 a.m..

Word limit: 2500 words

The group presentations are not assessed and will not contribute to the final mark for the course.

Assignment 2 (40%)

“Q-methodology: A case study application to [the subject covered in your Q group]”

Critically review Q-method and then set out, as you would in a journal article submission, what the methodology applied was, results and discussion.

Weighting: 40% of final course mark

Hand-in date: Monday 21 March 2011, 9.30 a.m.

Word limit: 2000 words

Reading List

Check sms.ed.ac.uk emails for PDFs/links

Perspective Setting:

Turner, Pearce & Bateman (1994) *Environmental Economics. An Elementary Introduction*. Harvester Wheatsheaf. [Two copies on reserve SAC library]

Pearce, D. and Turner, R.K. (1990) *Economics of Natural Resources and the Environment*. Harvester Wheatsheaf. [Two copies on reserve SAC library]

Faber, M, Manstetten, R. and Proops, J. (1996) *Ecological Economics: Concepts and Methods*. Edward Elgar.

Political Science/Sustainability/Economic critique/Measuring sustainability

Clayton, A.M.H. and Radcliffe, N.J. (1996) *Sustainability: a Systems Approach*. Earthscan. [KB bookshop/library catalogue]

Reid, D (1997) *Sustainable Development*. Earthscan. [KB bookshop/library catalogue]

Meadows, D.H., Meadows, D.L. and Randers, J. (1992) *Beyond the Limits*. Earthscan. [KB bookshop/library catalogue]

Daly, H.E. and Cobb, J. B. (1989) *For the Common Good*. Green Print.

Edwards-Jones, G., Davies, B. and Hussain, S.S. (2000) *Ecological economics. An Introduction*. Blackwell: Oxford. Chapters 1-3 and 11.

Multi-criteria analysis/Participatory Appraisal

Edwards-Jones, Davies and Hussain (2000) *Ecological Economics: An Introduction*. Blackwell: Oxford. Chapters 7 and 10 [SAC library]