

Applications in Ecological Economics

Module co-ordinator: Salman Hussain

S.Hussain@ed.sac.ac.uk, 01315354307

Module Aims

The module is presented in four interlinked sections. 1) an introduction to the development and ideology of ecological economics 2) using modelling to analyse real world problems 3) sustainability and environmental valuation - how we achieve it and how we measure our achievement 4) case studies in ecological economics. The module aims to:

- examine the links between economic and ecological systems in order to enhance economic and environmental policy;
- apply the 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:

SYSTEMS THEORY AND CONVENTIONAL ECONOMIC VALUATION

Salman Hussain

After the course introduction/administration/perspective-setting, this session considers the systems approach and outlines the differences between holism and reductionism.

The second part of this session considers the economic rationale for valuing the environment and presents the conventional economic valuation tools: contingent valuation method; hedonic pricing method; travel cost method. Applications of each of these methodologies are presented.

Week 2:

ECOLOGICAL ECONOMIC METHODS OF VALUATION

Christos Zografos

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 examining the use of natural resources for ecotourism development in Ecuador is presented.

Week 3:

ECONOMICS OF WATER

Dominic Moran

Water as a commodity has special supply and demand characteristics related to its multiple sources and multiple end uses. This lecture considers some of the socio-economic issues around the efficient allocation of water in society.

Week 4:

ECOLOGICAL ECONOMIC MODELLING: INTRODUCTION

Kostas Ververidis

Ecological economic modelling is an important and developing area of ecological economics, as it allows explicit links to be drawn between economic and ecological systems. In this, the first of two sessions, students will be introduced to the theoretical and practical aspects of modelling.

Week 5:

ECOLOGICAL ECONOMIC MODELLING: DEVELOPMENT AND APPLICATION

Kostas Ververidis

This session contains further and specific developments of modelling theory using practical examples through computer-based learning. This session will develop basic resource problems and explain the logic behind mathematical modelling, leading the student towards an appreciation of how to solve real world resource problems.

Week 6:

READING WEEK

Week 7:

MEASURING MACRO LEVEL SUSTAINABILITY

Salman Hussain

This session will cover the conventional economic tools used to measure the scale of the economy (the National Income Accounts) and recent developments in terms of Satellite environmental accounts. More radical ecological economics departures from these conventional tools are then discussed in the form of the Index of Sustainable Economic Welfare, Ecological Footprints and Ecological Space. The economic rationale for international trade is then presented and critiqued.

Week 8:

STUDENT PRESENTATIONS/PREPARATION

Week 9: 8 March

STUDENT PRESENTATIONS/PREPARATION

Week 10: 15 March

REVISION WEEK

Applications in Ecological Economics

Module Organiser: S. Salman Hussain

Assessments

50 % of the final mark will be attributed to the examination in Week 10.

The continuous assessment is to be split into two sections:

The Main Assignment

The main assignment will comprise 40% of the final assessment mark and is split into two sections.

40% of the final module mark is for an essay of no more than 3000 words.

10% of the final module mark is for a presentation on the subject of your essay.

The presentations will have two segments. First, there will be a group presentation on a theme area. Second, there will be a case study application and critique. *The student's presentation mark will be based only on his or her case study, i.e. the second part.*

The generic topic is: "A critical review of the development of tools/applications used to address a defined environmental issue"

- Issues of efficiency, equity and sustainability are to be evaluated for each chosen assignment topic
 1. water resource management
 2. deforestation
 3. desertification
 4. carbon sequestration/global warming
 5. ozone depletion
 6. biodiversity preservation
 7. species introductions
 8. international patent law and healthcare provision.

- In each topic, a case study application should be presented.
- Essay word length limit is 3000 words
- Essays in to Salman Hussain, room 315 SAC building by Tuesday 17 March 5 p.m.