Foundations of Ecological Economics

Code: 42407
ECTS Credits: 9

<table>
<thead>
<tr>
<th>Degree</th>
<th>Type</th>
<th>Year</th>
<th>Semester</th>
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<tbody>
<tr>
<td>4313784 Interdisciplinary Studies in Environmental, Economic and Social Sustainability</td>
<td>OT</td>
<td>0</td>
<td>1</td>
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</tbody>
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Contact

Name: Claudio Cattaneo
Email: Claudio.Cattaneo@uab.cat

Teachers

Jeroen Van Den Bergh
Sergio Villamayor Tomàs

Prerequisites

No aplica.

Objectives and Contextualisation

The course will introduce the field of ecological economics, paying attention to theoretical, methodological and empirical issues. Classic themes, important debates and recent research foci will receive attention. Valuation methods that cut across ecological and environmental economics will also be explored.

At the end of the course the student is expected to have a good understanding of:

1. The main themes, theories and methods addressed by ecological economics, including: the origins and principles of ecological economics, the idea of welfare and externalities, environmental and climate policy instruments, complex systems, environmental governance and conflicts, environmental and multi-criteria valuation, ecosystem services and the growth/degrowth debate;
2. The basic literature regarding ecological economics;
3. The essential differences between the way environmental problems and solutions are approached in environmental economics and ecological economics;
4. New methods that have been proposed by, and are applied within, ecological and environmental economics, such as environmental valuation methods, multi-scale integrated assessment, and social multi-criteria evaluation.
5. Key issues in the emerging field of degrowth studies

Skills

- Apply knowledge of environmental and ecological economics to the analysis and interpretation of environmental problem areas.
- Communicate and justify conclusions clearly and unambiguously to both specialised and non-specialised audiences.
- Communicate orally and in writing in English.
learning outcomes

1. Adopt a holistic perspective on the relationship between the economy and biophysical systems.
2. Communicate and justify conclusions clearly and unambiguously to both specialised and non-specialised audiences.
3. Communicate orally and in writing in English.
4. Continue the learning process, to a large extent autonomously.
5. Differentiate between the approaches to environmental problems of environmental and ecological economics.
6. Integrate knowledge and use it to make judgements in complex situations, with incomplete information, while keeping in mind social and ethical responsibilities.
7. Know the role of the institutions in environmental governance.
8. Seek out information in the scientific literature using appropriate channels, and use this information to formulate and contextualise research in environmental sciences.
9. Work in an international, multidisciplinary context.

content

The FEE course involves a series of 3-hour lectures organised in four main sub-modules under the responsibility of specific teachers. Some teachers may provide slides in advance through the CV but others may not. All readings need to be found by the student from internet and academic library sources (e.g. Scopus, Web of Knowledge) available on the UAB campus.

Sub-Module 1: Foundations, Policy & Innovation (JvdB)

1. History and principles of ecological economics (comparing with traditional environmental economics) (17th Oct)
2. Welfare, markets, externalities and public goods (19th Oct)
3. Environmental policy instruments (24th Oct)
4. Theories and methods of environmental valuation (26th Oct)
5. Economics of climate policy (31st Oct)
6. The environment-versus-growth debate (19th Dec)

Sub-Module 2: Institutional economics and environmental applications (SV)

7. Introduction institutional economics (2nd Nov)
8. Basics of game theory and coordination problems (7th Nov)
9. Property rights and the theory of the commons (9th Nov)
10. Environmental governance: Markets, governments and communities (14th Nov)
Sub-Module 3: Methods for integrated assessment (CC)

1. Introduction to analysis of social metabolism (16th Nov)
2. Social multi-criteria evaluation - SMCE (21st Nov)
3. SMCE in practice (23rd Nov)

Sub-Module 4: From Steady-State economics to degrowth (CC)

1. Ecological macroeconomics and SystemDynamics (28th Nov)
2. Introduction to the core arguments of degrowth (30th Nov)
3. Political Ecological Economics (5th Dec)
4. Well-being and happiness economics (12th Dec)
5. Solidarity economies (14th Dec)

Methodology

Lecturers will present a given topic and students will be expected to prepare for the class reading in advance the compulsory readings suggested in the bibliography. Lectures will involve time for questions and answers and for discussion; they might also involve role-play exercises and video-material. In class participation, tests and essays preparation will involve group and individual work, respectively.

Activities

<table>
<thead>
<tr>
<th>Title</th>
<th>Hours</th>
<th>ECTS</th>
<th>Learning outcomes</th>
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<tbody>
<tr>
<td>Type: Directed</td>
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<td></td>
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<tr>
<td>Lectures</td>
<td>54</td>
<td>2.16</td>
<td>6, 4</td>
</tr>
<tr>
<td>Presentation and discussion in class</td>
<td>8</td>
<td>0.32</td>
<td>3, 2, 6, 4, 9</td>
</tr>
</tbody>
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| Type: Autonomous                                |       |      |                   |
| Reading articles, books and studying for each   | 100   | 4    | 7, 1, 5, 6, 4, 9  |
| of the given lectures and the final exam        |       |      |                   |
| 2 short essays, and tests at the beginning of  | 60    | 2.4  | 8, 6, 4, 9        |
| classes which involve reading the necessary     |       |      |                   |
| literature to write the essays                  |       |      |                   |

Evaluation

Students will be assessed on the basis of (a) a written, closed-book exam; b) written essays, and c) their participation in class. In particular, they will be assessed based on:

1. Presence and participation in lectures: at least 75-80% of all lectures; absence should be justified.
2. A final exam, contributing to 50% of the final mark. The exam will take place on the 12th January 2017, from 10 to 13:00 hours. It will cover aspects of each module of the course. Students will have limited space to answer each of these questions and will have to show that they have understood and mastered key concepts and ideas introduced during the course. The contributing teachers will evaluate the exam together.
3. Written exercises and class tests
1) A 500-words personal statement corresponding to the last lecture of the course, focused on the environment-versus-growth debate, and to be submitted in class and to Jeroen van den Bergh by 15th November 2016, contributing to 10% of the final mark.

2) A 1000-words argumentative essay discussing critically a statement related to the sessions 7-10, to be submitted by email to Sergio Villamayor by 16th December 2016, and contributing to 20% of the final mark; the question (the statement to be discussed will be formulated in session 10)

3) Team-based closed-answer tests to be answered at the beginning of classes 11 to 18 and based on the mandatory readings of the corresponding classes, and contributing to 20% of the final mark:

### Evaluation activities

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<tr>
<th>Title</th>
<th>Weighting</th>
<th>Hours</th>
<th>ECTS</th>
<th>Learning outcomes</th>
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<tbody>
<tr>
<td>Final exam</td>
<td>50%</td>
<td>3</td>
<td>0.12</td>
<td>8, 3, 7, 1, 5, 2, 6, 4, 9</td>
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<tr>
<td>2 short essays and tests at the beginning of classes</td>
<td>50%</td>
<td>0</td>
<td>0</td>
<td>8, 3, 7, 5, 2, 6, 4, 9</td>
</tr>
</tbody>
</table>

### Bibliography

The literature marked with (*) is obligatory and must be read prior to each lecture since it will be the basis for the respective class. The other literature mentioned is voluntary background reading but students are encouraged to read as much as they can.

1. **History and principles of Ecological Economics**


2. **Welfare, markets, externalities and public goods**

(*) Kahn, J.R. 2004. The Economic Approach to Environmental and Natural Resources. 3rd edition, Thomson/South-Western, Fort Worth, Mason, Ohio. ch. 2; & ch. 4, section "What is Value".


3. **Environmental policy instruments**


4. **Theories and methods of environmental valuation**

(*) Perman et al., Valuing the Environment, Chapter 4 in Natural Resource and Environmental Economics


5. Economics of climate policy


Responses to / debate on the Stern review (http://www.hm-treasury.gov.uk/6520.htm).


6. The environment-versus-growth debate


Introduction institutional economics


8. Basics of game theory and coordination problems

(*) Bowles, S., (2009), Social interactions and institutional design, in Bowles, S., Microeconomics: behavior, institutions, and evolution: Princeton University Press (pp. 23-56).
9. Property rights and the theory of the commons


10. Environmental governance: Markets, governments and communities


Muradian, R. (2013), Payments for ecosystem services as incentives for collective action, Society & Natural Resources, 26(10), 1155-1169.

11. Analysis of Social metabolism: MEFA, MuSIASEM, MultiEROI


(*) Tello, E. et al 2017. Opening the black box of energy throughputs in farm systems: a decomposition analysis between the energy returns to external inputs, internal biomass reuses and total input consumed (the Valles county, Catalonia, c.1860 and 1999). Ecological Economics 121, pp.:160-174


12. Social multi-criteria evaluation - SMCE


13. SMCE in practice

A Multi Criteria exercise will be practiced by student teams in class. Information about the exercise will be uploaded on the platform.

14. Ecological Macroeconomics and System Dynamics


Highlights of the lecture:

We present and critically discuss the green growth approach.
We introduce and investigate the ecological macroeconomics literature
Why system dynamics is a powerful tool for policies evaluation
A post-growth model of Ecological Macroeconomics (EUROGREEN)

15. From Steady State to Degrowth - introduction of the core arguments of degrowth


16. Political Ecological Economics - integrating the ideas of political ecology to those of ecological economics


Kallis, G. Indefense of degrowth. Opinions and minifiestos. (Chapters 2 and 3) https://indefenseofdegrowth.com
17. Well-being and happiness economics

(*) Sekulova F., van den Bergh J.C.J.M. 2014. Climate change, income and happiness: An empirical study for Barcelona*. Global Environmental Change 23(6), pp.: 1467-1475


18. Solidarity economies


