



DEPARTMENT OF BIOLOGICAL AND ENVIRONMENTAL SCIENCES

ES1601 Environmental Economics, 15 credits

Miljöekonomi, 15 högskolepoäng

First Cycle

Confirmation

This course syllabus was confirmed by Department of Biological and Environmental Sciences on 2013-06-07 and was last revised on 2018-07-02 to be valid from 2018-07-02, autumn semester of 2018.

Field of education: Science 100%

Department: Department of Biological and Environmental Sciences

Position in the educational system

The course could be included in the Bachelor of Environmental Sciences with an emphasis in natural sciences as well as the Bachelor of Environmental Sciences, with an emphasis in social sciences, at the University of Gothenburg. The course could be chosen as a freestanding course.

The course is at First cycle level in environmental science. The course is recommended for students without background studies in economics.

The course can be part of the following programmes: 1) Bachelor of Science in Environmental Science (N1MVN) and 2) Program in Environmental Social Science (S1SMI)

Main field of studies

Environmental Science

Specialization

G2F, First Cycle, has at least 60 credits in first-cycle course/s as entry requirements

Entry requirements

Admission to Environmental and Resource Economics requires the completion of 120 HEC, or equivalent.

English B level or English proficiency equivalent to IELTS 6.0 no part under 5.0 or TOEFL 550 p, TWE score 4 is also required.

Learning outcomes

After the course, the student is expected to:

5.1 Knowledge and understanding

To pass the course the participants should:

1. be able to discuss, explain and analyze microeconomic theory pertaining to environmental and resource economics. This includes to understand why environmental and resource problems arise due to open access, public goods and external effects. Students should also be familiar with normative economic issues and the ethical foundations like for example utilitarianism
2. be able to understand how to conduct a cost-benefit analysis. The student should be able to think in economic terms in order to identify and evaluate the costs and benefits to be included in the analysis. Moreover, the students should be able to understand how to apply the main techniques - revealed and stated preferences - available for valuing non-market benefits. Special emphasis is given to the valuation of changes in environmental quality.
3. be able to discuss and explain dynamic issues like sustainability and optimality. The student should also be familiar with the concept of discounting, the advantages and disadvantages of applying this concept, and how it is used in a cost-benefit analysis.
4. be able to define and explain what is meant with an optimal emission level. Special focus is put on the EU tradable emission scheme and the problem of climate change. The student should also have a thorough understanding of the mechanisms affecting technological adoption and innovation, and give specific examples relating to the future energy system.

5.2 Skills and abilities

After completed course, the participants should have shown ability to

- design a scenario for valuation of non-market goods in a stated preference survey.
- calculate net present value using a discount rate in a cost-benefit analysis.
- calculate an optimal emission level and suggest various policies that induce firms to behave optimally. The student should be able to give a number of real world examples of environmental policy instruments, their intended goals and how they have worked in reality.

5.3 Judgement and approach

After completion of the course the student should be able to

discuss the strengths and weaknesses of cost-benefit analysis for project analysis, and be aware of the importance of assumptions and the role of the analyst.

discuss the advantages and disadvantages of applying discounting in a cost-benefit analysis.

explain the different characteristics as well as pros and cons of various policy instruments

The course is sustainability-focused, which means that at least one of the learning outcomes clearly shows that the course content meets at least one of the University of Gothenburg's confirmed sustainability criteria. The content also constitutes the course's main focus.

Course content

The overall objective of the course is to introduce how environmental problems are analyzed in economics, primarily for students without a background in economics.

The course starts with a presentation of the welfare theoretic foundations, different types of regulations of environmental and resource problems, properties of different policy instruments as well as actual implementation of these instruments.

The second part of the course is an introduction to a social cost-benefit analysis of environmental problems. Different methods for environmental valuation are of particular importance in this part of the course.

Form of teaching

The course work consists of lectures, tutorials and a case study, including computer lab activities. The case study gives points to be used at the final written exam. Received credits from the project work will be saved and can be credited in any re-examination but only until the next time the course is offered.

Language of instruction: English

Assessment

The course comprises two forms of examination: a written exam, and active participation in four of five seminars.

A student who has failed a test twice has the right to change examiners, if it is possible. A written application should be sent to the Department.

Grades

The grading scale comprises: Pass with Distinction (VG), Pass (G) and Fail (U).

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For the seminars only Fail (U) and Pass (G) are given.

In order to be awarded G for the whole course of 15 HEC, G is required on both exam and seminar subpart.

For Pass with Distinction (VG) on the whole course, Pass with Distinction (VG) is required on the exam

Course evaluation

At the end of the course, both written and oral evaluation, are conducted. The results of the evaluation will be communicated to the students via the platform GUL, and will serve as a guide for the development of the course.

Additional information

Language: English