ENVS810

Environmental Economics

S1 Day 2018

Dept of Environmental Sciences

Contents

General Information

Unit convenor and teaching staff
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Credit points
4

Prerequisites
Admission to MEnv or MSc or MEnvEd or MEnvMgt or MEnvStud or MEnvPlan or MPlan or MSusDev or MWldMgt or MMarScMgt or MPPP or GradDipEnv or GradCertSusDev or GradDipSusDev or MConsBiol or GradDipConsBiol or MPH

Corequisites

Co-badged status

Unit description
This unit provides a comprehensive coverage of environmental economics and has been structured on the premise that course participants have little background in economics. The unit presents a different paradigm to conventional economics and illustrates how the study of mainstream economics needs to be reoriented in the light of the following premises: the natural environment is the core of any economy, and economic sustainability cannot be attained without environmental sustainability. The unit equips participants with an ability to engage in multi-disciplinary teams with environmental economists; analyse environmental and economic policy issues; and understand the nature of trade-off between environmental quality and economic growth. Examples of topics and methods covered include – cost-benefit analysis; environmental valuation methods; market failure, externalities and public goods; economics of climate change management including strategic behaviour using game theory; trade and the environment; hysteresis and resilience; taxes versus quotas; renewable and non-renewable resource management; economics of urban planning, transport, infrastructure and urban sprawl; managing irreversible and catastrophic events; risk, risk weighting and option value approach.

Important Academic Dates

Information about important academic dates including deadlines for withdrawing from units are available at https://www.mq.edu.au/study/calendar-of-dates

Learning Outcomes

On successful completion of this unit, you will be able to:

The course is intended to equip participants with introductory skills that would enable the analysis of contemporary environmental challenges and related economic policies.
An understanding of the key economic concepts and topics in environmental and resource economics--Discounting, willingness to pay, environmental valuation methods and shortcomings, cost benefit analysis--application and shortcomings, risk management, urban planning and the environment, managing water scarcity, economics of climate change management, emissions trading, permits vs quotas, ecological resilience and hysteresis, managing renewable and non-renewable resources, urban sprawl, etc.
Capability to formulate environmental problems using tools in economics and perform policy and scenario analysis using environmental valuation methods and Cost-Benefit Analysis (CBA), etc.
Understanding of resource constraints and management challenges faced by urban planners in the context of water scarcity, food security, climate change mitigation and adaptation challenges. Managing water scarcity in agriculture and urban areas.

General Assessment Information

Project reports are due by the deadline. Class participation is required for all sessions. You must make a presentation and submit a report to meet the minimum requirements for satisfactorily completing the course.

Assessment Tasks

Name	Weighting	Hurdle	Due
Project Report	50%	No	May 26
Presentation	25%	No	May 26
Class Participation	25%	No	throughout the course

Project Report

Due: **May 26**

Weighting: **50%**

This is the main assignment in this unit and carries a weight of 50 percent. The assignment involves performing an empirical analysis of an environmental project. The project must address a contemporary environmental challenge in Australia or globally. Students are expected to apply methods from coursework (such as cost-benefit analysis, environmental valuation methods and survey techniques) in their projects.

The project exercise is to be performed in small groups of two to three students. Relevant details will be provided during the first block sessions.

An electronic copy of the report, which includes the data files and excel sheets showing detailed calculations, must be submitted through turnitin by the due date. Hard copy submission is not required.

Further details on the rules of group work and marking criteria will be provided on iLearn.

No late submissions will be allowed.

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Presentation

Due: **May 26**
Weighting: **25%**

Involves presenting findings from the project report. Each student must make a presentation.

Further details on marking criteria will be provided on iLearn.

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Class Participation

Due: **throughout the course**
Weighting: **25%**

Class participation activities will involve: answering and asking questions during all block sessions including presentations. Students are required to meet with the instructor in small groups while working on the project. This is important for receiving crucial feedback.

Further details over marking criteria for this assessment task will be provided on iLearn

On successful completion you will be able to:

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sprawl, etc.

- Capability to formulate environmental problems using tools in economics and perform policy and scenario analysis using environmental valuation methods and Cost-Benefit Analysis (CBA), etc.
- Understanding of resource constraints and management challenges faced by urban planners in the context of water scarcity, food security, climate change mitigation and adaptation challenges. Managing water scarcity in agriculture and urban areas.

Delivery and Resources

Technology used: Students will need access to a computer with internet in order to complete their projects.

A lab session will be organized during one of the block teaching days for hands-on training. Students may also use the University computer labs while working on their projects.

Attempt will be made to provide all reading materials (except journal articles and books) on iLearn. Journal articles may not be available on ilearn due to copyright protection, but students may obtain the same through the library or from the instructor.

Reading materials include:

Prescribed books

Lecture notes

Tutorial Examples

Excel Examples

Class handouts

Instructor's notes during one-on-one sessions

Unit Schedule

(Topics 1-6 will be covered in relatively greater detail)

Topic 1• Introduction to Basic Micro Economics • Need for Environmental Economics • Willingness to Pay (WTP) • Demand Function • Consumer Surplus • Cost-Benefit Analysis (CBA) • Discounting the Future • CBA under uncertainty • Case Study • Environmental Accounting/ Green Accounting

Topic 2• Economic Efficiency • Externality • Market Failure • Property Rights • Insurance Markets for Natural Hazards • Case Study: Are you being Served? • Case Study: Elephants • Payment for Ecosystem Services

Topic 3• Valuation Methods – Contingent Valuation – Hedonic Valuation Method – Travel Cost Valuation Method • Value of Water

Topic 4• Environmental Kuznets Curve • Taxes Versus Quotas • Trade and the Environment •

Hysteresis and Resilience • Measuring Health Impacts of Pollution

Topic 5• Economics of Climate Change Mitigation and Adaptation – Scientific Evidence and Understanding – Integrating with Economics – Estimation of Costs of Global Warming – Economic Management tools and Cost Benefit Analysis – Discounting and Time Preference – Catastrophes • Thermohaline Circulation Belt • Permafrost Emissions

Topic 6• Economics of Managing Renewable and Non-Renewable Resources – Economics of Non-renewable Resource Extraction – Economics of Oil – Economics of Renewable Resource Extraction – Fisheries, Forestry – Challenges in Fisheries Management

Topic 7• Economics of Urban Planning – Theory of Origin of Urban areas – What are the tools available to a city planner to maximize societal welfare in urban areas? Rent control and Property Taxation – Case Studies – Excel Example

Topic 8• Economics of Transport/Infrastructure: Sustainable Transport Options, • Fuel Efficiency and Rebound effect – Economics of Providing Transport Infrastructure – Use of Renewable Resources in Transportation – Rebound Effect – Global Warming, Energy Use and Transportation Linkage – Political Economy of Urban Transportation – Congestion Pricing

Topic 9• Economics of Urban Sprawl • Factors Causing Urban sprawl • Three Types of Market Failures • Costs and Benefits of Land Use Planning • Managing Sprawl • Agriculture and Urban Sprawl • Sprawl and the Environment

Recommended Books:

Environmental Economics: An Introduction (Mcgraw-Hill) by Barry C. Field and Martha K. Field (7th edition)

Environmental and Natural Resource Economics, 10/e, by T. Titenberg and L. Lewis (Pearson Global Edition)

Learning and Teaching Activities

Lectures

Lectures will be interactive in nature and students will be asked to participate in problem solving exercises as well as group work

Computer lab sessions

for teaching CBA and project preparation

Project preparation

Main activity of the course

Presentation

Presenting project outcomes

Additional one-on-one sessions with the Instructor

Students will be asked to meet with the instructor in small groups and discuss their project work

Class Participation

Active class participation throughout the course

Policies and Procedures

Macquarie University policies and procedures are accessible from Policy Central (https://staff.mq.edu.au/work/strategy-planning-and-governance/university-policies-and-procedures/policy-central). Students should be aware of the following policies in particular with regard to Learning and Teaching:

- Academic Appeals Policy
- Academic Integrity Policy
- Academic Progression Policy
- Assessment Policy
- Fitness to Practice Procedure
- Grade Appeal Policy
- Complaint Management Procedure for Students and Members of the Public
- Special Consideration Policy *(**Note:** The Special Consideration Policy is effective from 4 December 2017 and replaces the Disruption to Studies Policy.)*

Undergraduate students seeking more policy resources can visit the Student Policy Gateway (https://students.mq.edu.au/support/study/student-policy-gateway). It is your one-stop-shop for the key policies you need to know about throughout your undergraduate student journey.

If you would like to see all the policies relevant to Learning and Teaching visit Policy Central (https://staff.mq.edu.au/work/strategy-planning-and-governance/university-policies-and-procedures/policy-central).

Student Code of Conduct

Macquarie University students have a responsibility to be familiar with the Student Code of Conduct: https://students.mq.edu.au/study/getting-started/student-conduct

Results

Results shown in *iLearn*, or released directly by your Unit Convenor, are not confirmed as they are subject to final approval by the University. Once approved, final results will be sent to your student email address and will be made available in eStudent. For more information visit ask.mq.edu.au.

Student Support

Macquarie University provides a range of support services for students. For details, visit http://stu

dents.mq.edu.au/support/

Learning Skills

Learning Skills (mq.edu.au/learningskills) provides academic writing resources and study strategies to improve your marks and take control of your study.

- Workshops
- StudyWise
- Academic Integrity Module for Students
- Ask a Learning Adviser

Student Services and Support

Students with a disability are encouraged to contact the Disability Service who can provide appropriate help with any issues that arise during their studies.

Student Enquiries

For all student enquiries, visit Student Connect at ask.mq.edu.au

IT Help

For help with University computer systems and technology, visit http://www.mq.edu.au/about_us/offices_and_units/information_technology/help/.

When using the University's IT, you must adhere to the Acceptable Use of IT Resources Policy. The policy applies to all who connect to the MQ network including students.

Graduate Capabilities

PG - Capable of Professional and Personal Judgment and Initiative

Our postgraduates will demonstrate a high standard of discernment and common sense in their professional and personal judgment. They will have the ability to make informed choices and decisions that reflect both the nature of their professional work and their personal perspectives.

This graduate capability is supported by:

Learning outcomes

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resilience and hysteresis, managing renewable and non-renewable resources, urban sprawl, etc.
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Assessment tasks

- Project Report
- Presentation
- Class Participation

Learning and teaching activities

- Lectures will be interactive in nature and students will be asked to participate in problem solving exercises as well as group work
- Main activity of the course
- Presenting project outcomes
- Active class participation throughout the course

PG - Discipline Knowledge and Skills

Our postgraduates will be able to demonstrate a significantly enhanced depth and breadth of knowledge, scholarly understanding, and specific subject content knowledge in their chosen fields.

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PG - Critical, Analytical and Integrative Thinking

Our postgraduates will be capable of utilising and reflecting on prior knowledge and experience, of applying higher level critical thinking skills, and of integrating and synthesising learning and knowledge from a range of sources and environments. A characteristic of this form of thinking is the generation of new, professionally oriented knowledge through personal or group-based critique of practice and theory.

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PG - Research and Problem Solving Capability

Our postgraduates will be capable of systematic enquiry; able to use research skills to create new knowledge that can be applied to real world issues, or contribute to a field of study or practice to enhance society. They will be capable of creative questioning, problem finding and problem solving.

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PG - Effective Communication

Our postgraduates will be able to communicate effectively and convey their views to different social, cultural, and professional audiences. They will be able to use a variety of technologically supported media to communicate with empathy using a range of written, spoken or visual formats.

This graduate capability is supported by:

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PG - Engaged and Responsible, Active and Ethical Citizens

Our postgraduates will be ethically aware and capable of confident transformative action in relation to their professional responsibilities and the wider community. They will have a sense of connectedness with others and country and have a sense of mutual obligation. They will be able to appreciate the impact of their professional roles for social justice and inclusion related to national and global issues

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