

COURSE CONTENT

Course Coordinator	Euston Quah
Course Code	HE3005 / HE3024
Course Title	Environmental Economics
Pre-requisites	HE1001 Microeconomics I/HE9091 Principles of Economics/ HE5091 Principles of Economics/ AB0901 Principles of Economics: A Singapore Perspective/HU9001 Introduction to Environment and Urban Studies/ HU5001 Introduction to Environment and Urban Studies
No of AUs	3
Contact Hours	3hrs seminar per week

Course Aims

Economic theory is applied to: environmental questions and issues associated with resource exploitation; the problem with externalities, in particular with pollution and their management through various economic institution, economic incentives, command and control policies and other instruments. Methods to analyse the economic implications of environmental policy are discussed with particular emphasis on the valuation of environmental quality, assessment of environmental damages. Analytical tools needed for the evaluation of projects which affects the environment, such as cost-benefit analysis, and environment impact analysis will also be presented. Further topics will include aspects of sustainable development, the problems associated with natural resource management, and select topics on international environmental issues as in global warming and climate change, and transboundary pollution.

Intended Learning Outcomes (ILO)

By the end of this course, you (as a student) would be able to:

1. Explain the keys concepts of environmental economics
2. Differentiate the forms of market failures
3. Compare and adopt the appropriate policy interventions for environmental market failures
4. Apply valuation techniques for intangible and non-market environmental goods
5. Recognize and apply cost-benefit analysis and game theory as tools in environmental issues
6. Evaluate contemporary environmental issues

Course Content

- Introduction to and history of environmental economics
- Optimal levels of externalities and pollution: Marginal abatement cost vs marginal damage function
- Public goods and the environment: Preference revelation
- Policy intervention measures in environmental market failures: moral suasion, direct provision, Pigouvian taxes, command and control, and others.
- Game theory and the environment
- Valuation of environmental goods: Stated and revealed preference approaches, damage schedule approach

- Introduction to cost-benefit analysis in environmental policies and problems: The 6 questions of CBA
- Contemporary issues in environmental economics: NIMBYs, waste management, climate change, transboundary pollution, and others.

Assessment (includes both continuous and summative assessment)

1. Continuous Assessment	:	50%
2. Final Exam	:	50%
Total	:	100%

Reading and References

1. Environmental and Nature Resource Economics, A Contemporary Approach by Jonathan M. Harris & Brian Roach; Third Edition
2. Low-Carbon Green Growth in Asia, Policies and Practices 2013: A Joint Study of the Asian Development Bank and the Asian Development Bank Institute
3. Environmental Economics and Management by Scott Callan and Janet Thomas; 5th Edition; Cengage Learning 2010
4. Environmental Economics by Barry Field and Martha Field; 5th Edition; McGraw-Hill 2009
5. Environmental and Natural Resource Economics by Tom Tietenberg & Lynne Lewis; 8th Edition; Pearson Addison Wesley 2009
6. Principles of Environmental Economics by Ahmed Hussen; 2nd Edition; Routledge 2004
7. Economics of the Environment: Selected Readings by Robert Stavins(editor); WWW Norton 2000 Page
8. Environmental Issues and Policy by Stephen Ison, Stephen Peake and Stuart Wall; Financial Times: Prentice-Hall 2002
9. Environmental Economics and Policy by Jonathan Lesser, Daniel Dodds and Richard Zerbe; Addison-Wesley 1997
10. Environmental Economics and Natural Resource Management by David Anderson; Thomson: Southwestern 2004
11. Natural Resource and Environmental Economics by Roger Perman, James McGilvray and Michael Common; 3rd Edition; Pearson Addison-Wesley 2003
12. The Economics of the Environment by Wallace Oates (editor); Edward Elgar 1994
13. Sustainable Environmental Management by Kerry Turner (editor); Belhaven: Westview 1990
14. Sustainable Development by David Reid; Earthscan 1999
15. The Costs of Economic Growth by E. J. Mishan; 2nd Edition; Weidenfeld and Nicolson 1993
16. Economic Growth and Environmental Sustainability by Paul Ekins; Routledge 2000
17. An Introduction to Ecological Economics by Robert Costanza et al.; St Lucie Press 1997
18. Cost-Benefit Analysis by E. J. Mishan and Euston Quah; 5th Edition; Routledge 2007
19. Cost-Benefit Analysis: Concepts and Practice by Anthony Boardman et al.; 3rd Edition; Prentice-Hall 2006
20. Siting Environmentally Unwanted Facilities by Euston Quah and K C Tan; Edward Elgar 2002

Course Instructors

Instructor	Office Location	Email
Euston QUAH	SHHK 04-86	ecsquahe@ntu.edu.sg

Planned Weekly Schedule

Week	Topic	Course LO	Readings/ Activities
1	Introduction to Environmental Economics, Overview	1	NA
2	Externalities, optimal levels of pollution	2	NA
3	Public goods and the environment	2	NA
4	Policy interventions and environmental market failures	1	NA
5	Game theory and the environment	3	NA
6	Valuation techniques: Stated preference approaches	4	NA
7	Valuation techniques: Revealed preference approaches, pairwise comparison	4	NA
Recess Week			
8	Presentation of Group project proposals, assessment and feedback	1-6	NA
9	Introduction to CBA and applications to environmental issues	5	NA
10	Contemporary issues in Environmental Economics: NIMBYs, Climate change	6	NA
11	Contemporary issues in Environmental Economics: Waste management, transboundary haze pollution	6	NA
12	Case study	6	NA
13	Group project presentations, assessment, discussion and feedback	1-6	NA