ECON359
Environmental Economics
Semester 2, 2011

Department of Economics
Year and Semester: Semester 2, 2011
Unit convenor: Dr Wylie Bradford
Prerequisites: ECON200 or ECON203
Credit points: 3

You should read this unit outline carefully at the start of semester. It contains important information about the unit. If anything in it is unclear, please consult the Unit Convenor.

ABOUT THIS UNIT

Welcome to Environmental Economics (ECON359). ECON359 is based around the mainstream economic approach towards the environment and natural resources, but also incorporates perspectives from ecological economics. Case studies will be drawn from Australian and international experience. The guiding economic themes will be competing uses of the environment / externalities, market failure, the importance of property rights, optimal allocation of pollution abatement, technical issues in non-market valuation methods (measuring benefits without commodities), and the processes for making choices relating to non-market goods. The importance of thresholds and constraints arising out of systemic ecological structures and the nature of physical reality will be emphasised where relevant.

This unit addresses questions of global significance that are integral to any comprehensive understanding of rational resource use and which underpin pressing topical debates regarding sustainability and intergenerational relationships. It draws on the techniques developed in ECON203 Microeconomic Analysis and ECON210 Public Economics. There are important synergies between the content of ECON359 and that of ECON309 Industrial Organisation and ECON336 Economic Development.

TEACHING STAFF

- Convenor : Dr Wylie Bradford, E4A425, ph: 98508467, wylie.bradford@mq.edu.au
- TBA

CONSULTATION TIMES

Wylie Bradford: by appointment in person; via email and BlackBoard generally.
You are encouraged to seek help from a staff member teaching on this unit at a time that is mutually convenient. Assistance will also be available via the unit’s Blackboard site. Students experiencing significant difficulties with any topic in the unit should seek assistance immediately.

**CLASSES**

- 1 x 2 hour lecture (Wed 10-12, F9C 013) and 1 x 1 hour tutorial (Wed 1 pm, W6B 315; Wed 2 pm X5B 143) per week.
- The timetable for classes can be found on the University web site at: http://www.timetables.mq.edu.au/
- It is intended that lectures will be recorded and accessible via the unit’s Blackboard site.

**TEXT**


  The text combines a direct and intuitive approach to theoretical issues with an appropriate degree of rigour that is missing in many other texts in the field. You should note that while the discussion of the techniques (principally dynamic optimisation in both present and current value forms) will play a role in the lecture material, you will **not** be asked (nor assessed on your ability) to apply the techniques in a problem-solving context. You will be expected to understand how the solutions to the dynamic optimisation problems translate into policy responses and judgments about welfare.

- The text can be purchased from the Macquarie University Co-op Bookshop. A copy will be made available in the Reserve section of the Library.

- Environmental economics has grown into a large and varied literature so there is no shortage of additional resources to draw upon should you so choose (N.B. intellectual monocultures lack resilience in the same way that ecological ones do…☺!) See the appendix for a for a non-exhaustive sampling of additional sources of information.

**TECHNOLOGY USED AND REQUIRED**

- Powerpoint presentations, visualiser.
- Technology requirements: nil beyond standard e.g. computer access.

**UNIT WEB PAGE**

- Course material is available on the learning management system (BlackBoard)
- The web page for this unit can be found at: https://learn.mq.edu.au/webct/logon/17269340471041
LEARNING OUTCOMES

The learning outcomes of this unit are for students to:

1. become familiar with the meaning and use of terminology and concepts associated with the economic analysis of environmental issues.

2. be able to identify the relevant economic aspects of environmental problems including key stakeholders and important incentive effects and their determinants.

3. be cognisant of the major theoretical approaches to the analysis of environmental issues, the assumptions on which they are based and their implications regarding the effects of changes in key parameters.

4. demonstrate knowledge of the data needs for a meaningful economic analysis of environmental problems, and be able to identify potential data sources and methods for collecting data.

5. have the capacity to assess and compare policy alternatives in relation to environmental issues in light of the factors dealt with in outcomes 3 and 4 above.

GRADUATE CAPABILITIES

In addition to the discipline-based learning objectives, all academic programs at Macquarie seek to develop the capabilities the University's graduates will need to develop to address the challenges, and to be effective, engaged participants in their world.

This unit contributes to this by developing the following graduate capabilities:

1. Discipline Specific Knowledge and Skills (see below)
2. Critical, Analytical and Integrative Thinking
3. Creative and Innovative
4. Effective Communication
5. Engaged and Ethical Local and Global citizens
6. Socially and Environmentally Active and Responsible

1. Discipline Specific Knowledge and Skills: Ability to
   a. Understand existing economic theories
   b. Apply economic theories to practical situations or problems
   c. Critically evaluate and test competing economic theories, comparing predictions to actual outcomes
   d. Examine real world issues from an economic perspective
TEACHING AND LEARNING STRATEGY

- The course material will be delivered via lectures and tutorial classes.
- Students should read at least the assigned materials before each lecture and prepare responses to all tutorial questions prior to each class.
- Throughout the semester students should focus their attention on developing responses to the final examination questions that will be distributed at the beginning of the course.

UNIT CALENDAR

<table>
<thead>
<tr>
<th>Week</th>
<th>Date</th>
<th>Lecture (text chapter)</th>
<th>Tutorial</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>3 Aug</td>
<td>Introduction and overview (1)</td>
<td>Orientation session</td>
</tr>
<tr>
<td>2</td>
<td>10 Aug</td>
<td>Non-renewable resources (7)</td>
<td>Diagnostic exercise</td>
</tr>
<tr>
<td>3</td>
<td>17 Aug</td>
<td>Fishery economics (4)</td>
<td>Intro/Non-renewables</td>
</tr>
<tr>
<td>4</td>
<td>24 Aug</td>
<td>Forestry economics (5)</td>
<td>Fisheries</td>
</tr>
<tr>
<td>5</td>
<td>31 Sep</td>
<td>Water economics (6)</td>
<td>Forests</td>
</tr>
<tr>
<td>6</td>
<td>7 Sep</td>
<td>Pollution control (3)</td>
<td>Water</td>
</tr>
<tr>
<td>7</td>
<td>14 Sep</td>
<td>Property rights (2)</td>
<td>Discussion/revision *</td>
</tr>
</tbody>
</table>

Mid-semester break

<table>
<thead>
<tr>
<th>Week</th>
<th>Date</th>
<th>Lecture (text chapter)</th>
<th>Tutorial</th>
</tr>
</thead>
<tbody>
<tr>
<td>8</td>
<td>5 Oct</td>
<td>Environmental valuation (8-10)</td>
<td>Pollution</td>
</tr>
<tr>
<td>9</td>
<td>12 Oct</td>
<td>Environmental valuation (8-10)</td>
<td>Property rights</td>
</tr>
<tr>
<td>10</td>
<td>19 Oct</td>
<td>Growth and the environment (11)</td>
<td>Valuation</td>
</tr>
<tr>
<td>11</td>
<td>26 Oct</td>
<td>Environmental accounting and measurement issues (12)</td>
<td>Growth</td>
</tr>
<tr>
<td>12</td>
<td>2 Nov</td>
<td>Climate change (11,14)</td>
<td>Accounting &amp; Measurement</td>
</tr>
<tr>
<td>13</td>
<td>9 Nov</td>
<td>TBA</td>
<td>Discussion/revision *</td>
</tr>
</tbody>
</table>

RESEARCH AND PRACTICE

- This unit uses research by Macquarie University researchers (references provided as employed).
- This unit uses research from external sources (references provided as employed).
- This unit gives you practice in applying research findings in your assessments.

* no directly assessible content
In accordance with University policy there will be a low-risk early diagnostic exercise held in week 2. This test will not count towards assessment per se, but is designed to identify those students who are likely to find successful completion of the unit a struggle. The exam will cover basic economic analysis relevant to environmental economics. Three outcomes are possible: satisfactory, borderline and unsatisfactory. **Those students who record an unsatisfactory result should strongly consider withdrawing from the course prior to the Census date (31 August) as they are at risk of failure if they continue.** Students who record a borderline result should
take that as a signal that serious application will be required in order to achieve a favourable outcome in the unit.

The weights listed for each assessment task in the table above will be used to calculate your raw mark. The raw mark will be a weighted harmonic mean of the individual assessment marks, each expressed as a percentage:

\[
RM = \frac{1}{\left( \frac{0.2}{T\%} + \frac{0.3}{A\%} + \frac{0.5}{FE\%} \right)}
\]

where

- \(T\%\) = tutorial assessment total mark (percentage)
- \(A\%\) = assignment mark (percentage)
- \(FE\%\) = final exam mark (percentage)

It is important to note that the raw mark is an input into the determination of your final grade, but not the sole determinant. The University’s Grading Policy will be applied when determining your final result.


Your final result will be expressed as a Standardised Numerical Grade (SNG). The value of the SNG denotes the level of performance attained (e.g. an SNG of 66 indicates that a student performed at a level sufficient to earn a CR grade but below that of a student with an SNG of 73, while an SNG below 45 indicates that the student has failed to demonstrate sufficient competence to earn a passing grade and so on) and the SNG need not coincide with the calculated raw mark. As the SNG is not a mark per se but an index of performance, it follows that statements of the form “I am only x marks away from [insert grade here]” are strictly invalid and no dialogue will be entered into on that basis following the release of final results.

You should also note that the fact that the raw mark is calculated as a weighted harmonic mean has some important implications:

- As the combination of assessment marks is not linear it is not correct to say, for example, that the tutorial submissions are worth 20 marks or contribute up to 20 marks to the total of 100. In fact the tutorial submissions in total have a weight of 0.2; their actual contribution to the final raw mark varies with their value and that of the other assessments.
- A zero result in any assessment will render the calculation of a raw mark impossible and will result therefore in failure in the unit. A necessary condition for passing the course is non-zero results in all assessments tasks.
- The harmonic mean punishes inconsistency. If you perform at a HD level in all assessments your raw mark will be consistent with the HD range. A low mark in
one assessment will pull your raw mark down by more than if it was calculated as a weighted arithmetic mean (the traditional ‘adding up’ scenario). Hence it is important to approach each assessment task with the appropriate degree of seriousness in terms of preparation.

TUTORIALS

Beginning in Week 3, tutorial questions will contain a mixture of assessible and non-assessible content. Each student will submit answers to the assessible content of 5 tutorials throughout the semester. The timing of these submissions (i.e. the weeks in which they occur) is at the discretion of the individual student. The solutions are to be uploaded to the assignment dropbox on the unit Blackboard site and to Turnitin prior to 1pm in the chosen weeks. Solutions uploaded after 1pm will be invalid and will not be registered as a submission. Solutions will be provided. The tutorial assessments collectively have an assessment weight of 0.2. The final tutorial class before the midsemester break, and the final class of the semester, will be general discussion/revision sessions without assessible content. The purpose of these classes is to allow for questions, clarifications and reflections on the course material.

ASSIGNMENT

You will be required to participate in a group assessment task in ECON359. Group membership will be determined by the Unit convenor and finalised after the Week 2 deadline for changing classes has passed. The assignment will focus on an economic analysis of the policy response to climate change, taking the carbon price/emissions trading scheme put forward by the Australian Government as a starting point. Group members will have to decide on what approach they will take, what the separate strands of that approach will be and which members will be identified as having responsibility for each. Further details will be made available in Week 3.

Each group will submit by 9 September a brief plan indicating their chosen approach to the question and how the execution of same has been allocated among the group members. The plan will be assessed on coherence and manageability grounds and will account for one-sixth of the total marks for the assignment for each group member. The final submission is due on 17 October. One-third of the total marks for the assignment for each group member will be based on the coherence of the execution of the overall project. The remaining 50% of the assignment marks will be based on each individual’s designated contribution.

It is to be taken for granted that all group members accept responsibility for the collectively submittted project. The ability to work in teams is an important generic skill involving not only the ability to compromise and to adapt one’s ‘vision’ to that of others but also the management of those who are unwilling to do so, or who do not supply the requisite effort-intensity. Disagreements, commitment issues etc need to be managed within the group in a way that facilitates a successful final
submission. Group members will have the opportunity to peer-review the individual contributions to group activity (organisation, planning, editing etc). Those individuals whose contributions are rated as unsatisfactory by their peers will receive zero marks for the respective group components of the assignment. Cases of intractable conflict or failure to participate should be referred to the Unit Convenor for resolution by fiat.

SUBMISSION OF ASSESSMENT MATERIAL

All assessment submissions must be made electronically in two ways:

(1) Via the ‘Assignment’ tool on the web site;

(2) Electronic version via Turnitin. Go to www.turnitin.com and click on ‘create a user profile’. Then select ‘student’ from the drop down menu and follow the steps. The class ID number is 4157180 and the password is ecology. You use these to establish an account for ECON359. Note that passwords are case sensitive, so type it exactly as it appears here. You will then get your own user ID and password.

EXAMINATIONS

A final examination is included as an assessment task for this unit to provide assurance that:

i) the product belongs to the student and
ii) the student has attained the knowledge and skills tested in the exam.

A 2-hour final examination for this unit will be held during the University Examination period.

The University Examination period in Second Half Year 2011 is from 14 November to 2 December.


You are expected to present yourself for examination at the time and place designated in the University Examination Timetable. The timetable will be available in Draft form approximately eight weeks before the commencement of the examinations and in Final form approximately four weeks before the commencement of the examinations.

http://www.exams.mq.edu.au/

The only exception to not sitting an examination at the designated time is because of documented illness or unavoidable disruption. In these circumstances you may wish to consider applying for Special Consideration. The University’s policy on special consideration process is available at
No consideration will be given to so-called ‘misread timetable’ cases. Failure to sit a scheduled examination that is not explicable in terms of unavoidable disruption as defined in University policy will result in a Failed Absent (FA) grade for the unit.

As special consideration is a form of insurance, economic theory dictates that it not be full, and that it should be priced. Hence, the ‘premium’ required to be paid is satisfactory performance in within-semester assessment. No student will be granted special consideration in this unit if either:

1. they have failed to submit five tutorial exercises OR
2. they have failed to submit an assignment for which their contribution to the group component was rated as satisfactory by the other members of their group.

If a Supplementary Examination is granted as a result of the Special Consideration process the examination will be scheduled after the conclusion of the official examination period.

All students who submit special consideration requests that are subsequently found to be valid will be required to sit a supplementary examination. University policy precludes the addition of marks to students’ results as a form of consideration.

Students in this unit will sit one final examination only for assessment purposes. If a supplementary examination is granted the result in the scheduled final examination (if any) is automatically rendered null and void, and replaced by the result in the supplementary.

The Macquarie university examination policy details the principles and conduct of examinations at the University. The policy is available at:

http://www.mq.edu.au/policy/docs/examination/policy.htm

**Academic Honesty**

The nature of scholarly endeavour, dependent as it is on the work of others, binds all members of the University community to abide by the principles of academic honesty. Its fundamental principle is that all staff and students act with integrity in the creation, development, application and use of ideas and information. This means that:

- all academic work claimed as original is the work of the author making the claim
- all academic collaborations are acknowledged
- academic work is not falsified in any way
• when the ideas of others are used, these ideas are acknowledged appropriately.

Further information on the academic honesty can be found in the Macquarie University Academic Honesty Policy at

http://www.mq.edu.au/policy/docs/academic_honesty/policy.html

**Grading Appeals and Final Examination Script Viewing**

If, at the conclusion of the unit, you are considering lodging an appeal of grade and/or viewing your final exam script please refer to the following website which provides information about these processes and the cut off dates in the first instance. Read the instructions provided concerning what constitutes valid grounds for appeal before appealing your grade.

http://www.businessandeconomics.mq.edu.au/new_and_current_students/undergraduate/how_do_i/grade_appeals

**Student Support Services**

Macquarie University provides a range of Academic Student Support Services. Details of these services can be accessed at http://www.student.mq.edu.au.

[Individual Unit Convenors may wish to add Unit/ Faculty specific support eg BESS, Room, PAL, E4B Consultation Room.]

**IT Conditions of Use**

Access to all student computing facilities within the Faculty of Business and Economics is restricted to authorised coursework for approved units. Student ID cards must be displayed in the locations provided at all times.

Students are expected to act responsibly when utilising University IT facilities. The following regulations apply to the use of computing facilities and online services:

● Accessing inappropriate web sites or downloading inappropriate material is not permitted. Material that is not related to coursework for approved unit is deemed inappropriate.

● Downloading copyright material without permission from the copyright owner is illegal, and strictly prohibited. Students detected undertaking such activities will face disciplinary action, which may result in criminal proceedings.

Non-compliance with these conditions may result in disciplinary action without further notice.

**Students must use their Macquarie University email addresses to communicate with staff as it is University policy that the University-issued email account is used for official University communication.**
Appendix: Alternative texts etc

Texts
Tietenberg, T., Environmental and Natural Resource Economics (various eds.).

Other books


**Journals**

Australian Economic Papers
Australian Forestry
Australian Journal of Agricultural and Resource Economics
Australian Journal of Environmental Management
Economic Record
International
American Journal of Agricultural Economics
Ecological Economics
Environment and Development Economics
Environment and Planning
Environmental and Resource Economics
Environmental Conservation
Energy Journal
Energy Policy
Journal of Agricultural and Resource Economics
Journal of Environmental Economics and Management
Journal of Environmental Management
Land Economics
Natural Resources Journal
Natural Resources Modeling
Resource and Energy Economics
Review of Agricultural Economics

**Web Sites**

[http://www.aere.org](http://www.aere.org) (Association of Environmental and Resource Economists (AERE))


http://www.epa.gov/ebtpages/economics.html - US EPA, Economics Unit
http://www.vwl.uni-mannheim.de/conrad/eaere/ (European Association of Environmental and Resource Economists (EAERE))
http://www.oecd.org - OECD, several of the Directorates deal with Environmental Econ.
And many, many more.....