

**Natural Resource Economics
Economics 355**

Syllabus

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1 Introduction

As per the description in the undergraduate bulletin, this course is intended as an introduction to the economics of natural resource use. The course will be sectioned into three primary subject areas: exhaustible resources (*e.g.*, oil and other minerals), renewable resources (*e.g.*, fish and forests), and policy analysis (*e.g.*, regulation, conservation, and market solutions).

Natural resource economics builds on introductory microeconomics in a number of directions including, but not limited to, additional quantitative analyses, dynamic (*i.e.*, time-dependent) issues, and policy discussions. Our class will traverse all of these extensions. We will be making use of the basic principles of mathematical optimization, and, of course, economic analysis more generally.

As a field, natural resource economics is actively and widely studied. Natural resource economists, as a group, often interject a somewhat different angle on environmental debates than those posed by non-economists. Thus, at times, it appears that economists hold controversial views about environmental objectives. We shall be mindful of this potential issue as we move through the course.

The primary objective of the course is for you to obtain a knowledge of how economic modelling techniques are used to frame and critically analyze the public and private aspects of natural resource use.

2 Required Text

1. *The Economics of Natural Resource Use, 2nd edition*, by John Hartwick and Nancy Olewiler.

Additional readings and handouts will be made available through the course website as the term unfolds.

3 Evaluation

Your course grade will be determined by your performance on the following:

- Two quizzes, each worth 10 points.
- Two problem sets, each worth 20 points.
- Two exams, each worth 20 points.

Thus, you can earn a maximum of 100 points. I reserve the right to “curve” the class in your collective favor, if necessary. The grade distribution is as follows:¹

A	AB	B	BC	C	CD	D	F
100–92	92–88	88–80	80–78	78–70	70–68	68–60	60–0

3.1 Exams

The tests will be cumulative, but I will generally structure them to emphasize newer material. The exam dates (both Thursdays) are as follows:

1. **21 March**
2. **15 May**

The exams will primarily be multiple choice, though some essay and true-false questions may appear as well. Exams are open-book / open-note format.

3.2 Quizzes

The quizzes will be held one week prior to each exam.

3.3 Problem Sets

Each problem set will be due one week before the exam (the same day as the quizzes).

3.4 Review Sessions

The Tuesday prior to each exam will be a review session. Quizzes and problems sets will also be returned on that day.

4 Subjects Areas and Sub-Topics

While I generally prefer to let upper-level classes evolve (in part) according to the interests of the students, there is a core set of topics that characterize a natural resource economics class. We shall cover most or all of the following items in some form before term’s end.

¹ If your grade falls on a bound, you will receive the higher grade.

1. Background Microeconomic Topics

- Economic principles review
- Mathematics review and primer
- Statistics review and primer
- Present discounted value
- Inter-temporal choice
- Optimization
- Costs and Benefits: Analysis at the margin
- Externalities

2. Natural Resource Topics

- Auctions
- Bio-diversity
- Fish
- Forests
- Minerals
- Oil
- Open access
- PERC
- Pollution
- Property rights
- Tax Policies
- Tragedy of the commons
- Water rights