NATURAL-RESOURCE ECONOMICS, ECON 405B, Winter 2025

Tuesday and Thursday, 4:00 to 5:30 pm
Three (3) credits.
Prerequisite: ECON 230 or equivalent.

In addition to the material covered in intermediate microeconomics (ECON 230), you will need facility with economic terms, assumptions, approaches and analytic results, as well as algebra and geometry. Calculus and its dynamic progeny (calculus of variations, optimal control theory and dynamic programming) are avoided in the lectures. They are, however, used in almost all published work on the subject.

rights) in a fishery have many analogies in other types of environmental problem. The externalities are studied in simplified models and the implications for corrective policies are discussed.

4. Non-renewable resources. Non-renewable resources are a main vehicle for studying the success or failure of the market over time. Allocations in abstract models are studied and then the organization of markets.

TEXTBOOK:

In my lectures I do not follow a textbook.

There are a small number of textbooks in the field. If you have access to one, it may be a help. I can suggest the following.

If you plan to do graduate work in economics or finance or have a background in mathematics, I recommend *The Economics of Natural Resource Use*, first or second edition, by J. Hartwick and N. Olewiler, Addison-Wesley. Its approach is conceptually close to that of the course but mathematically more demanding.

A book that is just above the mathematical level of the course is by Jon Conrad, *Resource Economics*, 1999; second edition 2010. The first edition is available online from the McGill Library. It is useful if you have some calculus or are willing to put up with minor use of it. It uses Excel to do examples, and some may find this approach helpful. Conrad includes a terse section of a chapter on the interest rate.

Two books are quite good and have minimal use of calculus but are out of print. If either were in print, I would recommend it as a textbook.

Natural Resources in Canada: Economic Theory and Policy by F.J. Anderson.

The Economics of the Environment and Natural Resources by R.Q. Grafton *et al*.

These or any of several other textbooks may be a good but limited reference, suggesting a framework for thinking and further references.

A simple discussion of the interest rate that gives the basics is found in *Environmental Economics and Policy* by T. Tietenberg and L. Lewis, 6th or later edition.

The chapters in any textbook usually correspond to the topics above or some obvious variation. It should be fairly easy to read in parallel with the topics of the lectures. I have my own opinions on some of the issues.

EVALUATION

Evaluation timing and methods are subject to change in circumstances outside the university's control.

Evaluation consists of four in-class tests, three worth 30% each on Thursday 30 January, Thursday 27 February and Thursday 27 March, as well as one on Thursday 10 April worth 10%.

They are to be written in class, without aides and under a time constraint. You must be free at these times, having no conflict with the time of the course.

The tests ask for short answers that must be within lines provided on a test paper. The test paper is one page long and is to be handed in. Conciseness is at a premium. I suggest that you first read a question attentively and then formulate your answer by making notes on the back of the paper. (This material will not be marked.) Write the answer itself

carefully and legibly. The method can be unforgiving if you are not careful. Numerical questions may be asked but there is no need for a calculator.
Once the papers are marked, I bring them to class twice before I discard them.
If you have a complaint about a mark on a test question, first take the matter up with the TA. If you still disagree with the mark and wish to come to me, I ask for a succinct, typed, one-page statement of why it should be adjusted. The entire paper will be re-marked and the statement will form part of the re-evaluation. There is a risk that the total mark for the paper will be reduced in such cases.

While the questions themselves may appear innocuous, I am looking for economic sophistication in the answers.

COURSE DESCRIPTION

features are abstracted away in order to stress the underlying economic issues for