

## Natural Resource Economics

Economics 861

Section: G100

Term: 2011 Summer

Instructor: T. Heaps

Discussion Topics:

This course will begin with a discussion of the linkages between the economy and the environment: two parts of a whole. Then the principles of basic welfare economics and discounting will be explained. Next, the economics of fisheries will be discussed including the open access problem and static and dynamic maximum economic yield. Following this, the economics of forestry will be covered (see picture). Then the course will return to fisheries and strategies for their optimal management over time. Finally, the economics of nonrenewable resource use will be developed and issues relating to optimal extraction patterns, market structures, taxation, uncertainty and economic growth will be discussed.

The course will tend to follow the textbook but with more of an emphasis on the use of dynamic optimization techniques to investigate the solutions of the various models. These techniques are essential for understanding much of the recent literature in natural resource economics. A prior knowledge of optimization techniques such as optimal control theory would, therefore, be helpful although such knowledge is not expected. The techniques needed will be taught in the course as required.

Grading:

The course grade will be based on written assignments (20%), a midterm (40%) and a final (40%). Please note that most announcements will be distributed to the class by e-mail. Some course material including this outline, a link to the texts Web page and a number of items providing information on natural resource industries is already available on the course Web page <http://www.sfu.ca/~heaps/861>. Other items such as lecture notes, assignments and past exams will be added as the semester progresses

Required Texts:

Philip  
A. Neher, Natural Resource Economics:  
Conservation and Exploitation,  
Press, 1990.

Four  
useful references for dynamic optimization techniques are:

Colin  
W. Clark, Mathematical Bioeconomics, (Wiley 2nd ed., 1990).  
Angel de la Fuente, Mathematical  
Methods and Models for Economists, (Cambridge University Press, 2000).  
Michael Hoy, John Livernois, Chris McKenna, Ray Rees and  
Thanasis Stengos, Mathematics for  
Economics (second edn.) (MIT Press, 2001)

## **Natural Resource Economics**

Daniel

Léonard and Ngo Van Long, Optimal

Control Theory and Static Optimization in Economics, Cambridge University Press, 1992.

Recommended Texts:

Materials/Supplies:

Prerequisite/Corequisite:

Notes:

Students requiring accommodations as a result of a disability must contact the Centre for Students with Disabilities at 778-782-3112 or csdo@sfu.ca

All

students are expected to read and understand SFUs policies with regard to academic dishonesty (S 10.02 and S 10.03).

These policies are available at the following web addresses:

<http://www.sfu.ca/policies/gazette/student/s10-02.html> and

<http://www.sfu.ca/policies/gazette/student/s10-03.html>

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