ADVANCED THEORY OF RESOURCE ECONOMICS

Department of Agribusiness & Agricultural Economics
ABIZ 7430/Econ 7430

Winter 2020

Instructor: Gary V. Johnson 358 Agricultural Building 204-474-9795
gary.johnson@umanitoba.ca

Course Type: A graduate seminar/lecture course in the theory of natural resource and environmental economics with applications to resource and environmental management issues. The seminar/lecture format will involve readings and weekly meetings.

Schedule: Tuesday and Thursday 9 am to 10:10 am, room 365, Agricultural Building

Texts:

Content: Topics will include but are not limited to the following. Student interests will be accommodated as much as possible. Topics will be chosen from the following list.

- Property Rights and Common Property
- Dynamics of Resource Use and Management (Optimal Control Theory—Calculus Background Required)
- Dynamics of Renewable Resource Use Over Time
  - Population Dynamics
  - Mining of a Renewable Resource
  - Applications
  - Fisheries
  - Forestry
  - Wildlife Management
- Dynamics of Exhaustible Resource Use Over Time
  - Depletion of Resources Over Time
  - Scarcity of Resources
- Substitution
- Applications
  - Minerals
  - Fossil Fuels
- Natural Resource and Environmental Valuation and Pricing
  - Economic Rent Concepts and Theory
  - Resource and Environmental Pricing Methods and Policies
- Environmental Economics
  - Externalities
  - Pollution Control Policies
  - Monitoring and Enforcement
  - Applications
    - Water Pollution Control
    - Hazardous Waste Disposal
- Risk and Uncertainty in Resource Management
  - Option Value Concepts
  - Applications
    - Environmental Preservation
    - Biological Diversity
- The Economics of Sustainable Development
  - Theory and Concepts
  - Applications
    - Developed Countries
    - Developing Countries
- Additional or Substitute Topics Proposed by Participants

**Proposed Grading:** 1 midterm (date to be determined with student input), 1 research paper, and a final exam

Percent of Total Grade

<table>
<thead>
<tr>
<th>Component</th>
<th>Percent</th>
</tr>
</thead>
<tbody>
<tr>
<td>Midterm Exam</td>
<td>20%</td>
</tr>
<tr>
<td>Research Paper (10 pages maximum single spaced)</td>
<td>40%</td>
</tr>
<tr>
<td>Final Exam</td>
<td>40%</td>
</tr>
</tbody>
</table>

The research paper must be handed in via email. The paper will be graded on two criteria,

1. content, and
2. English usage.
Late papers will be dropped a half a letter grade for each day late. A student caught plagiarizing or cheating will be subject to the regulations in the University of Manitoba General Calendar for the Academic Year 2011-2012 as given at http://crscalprod1.cc.umanitoba.ca/Catalog/ViewCatalog.aspx?pageid=viewcatalog&catalogid=60&chapterid=227&topicgroupid=4056

**READINGS**

**Basic Tools and Concepts**

*Property Rights and Common Property*

Required:


Trebilcock. Chapter 2

Suggested Readings:


Neher Epilogue pp.349-50.

Welfare Measures

Required Reading:

Just, Hueth and Schmitz. 14-177.

Suggested Readings:

Externalities

Required Reading:

Just, Hueth and Schmitz. 527-571.


Suggested Readings:


Dynamic Optimization

Required Readings:

Conrad and Clark 1-61.

Suggested Readings:


Dynamics of Renewable Resource Use Over Time

Required Readings:
Conrad and Clark 62-116

*Dynamics of Exhaustible Resource Use Over Time*

Required Readings:

Conrad and Clark 117-145


*Environmental Economics*

Required Readings:

Conrad and Clark 146-175

Suggested Readings:


*Risk and Uncertainty in Resource Management*

Required Readings:

Just, Hueth, and Schmitz. 467-526

Suggested Readings:

