2012

ECON 320-01 Natural Resource, Ecological and Environmental Economics

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"Seemingly efficient allocation of each resource individually will not necessarily lead to the efficient allocation of all resources together...Breaking a system down to better understand its individual components is a useful analytic tool, but it can seriously mislead us unless we subsequently synthesize these components into an integrated understanding of the whole." (Daly, p. 231)

"Plant a tree." (E.F. Schumacher's response to a request for strictly political advice based on his economic and social insights)

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Fax: 513-745-3692  
Office Hours: TR 11:15-11:30 AM, 12:45-1 PM, 2:15-3:15PM and by appointment

PLEASE identify yourself fully, with name and course number, in all e-mails and voicemails.

Dept. Assistant: Jeanne Sanker, 318A Smith Hall  
M-F 9 AM – 5 PM (lunch 12-1)  
Phone/Voicemail: 745-3064  
E-mail: sanker@xavier.edu

BLACKBOARD: This course requires access to Blackboard. Please address all Blackboard access questions to the help desk: 745-HELP as I am unable to assist with this. Note: you can access Blackboard from this website (without using MyXU, don’t put www at beginning):  
http://blackboard.xu.edu

TEXTS: (required) Herman Daly and Joshua Farley, *Ecological Economics*, 2nd ed. (DF)  

Other readings as assigned

PRE-REQUISITES: ECON 200 and/or 201, Principles of Micro and Macroeconomics, respectively. If you have not had 200 (or your knowledge is rusty), please thoroughly review Ch 8 & 9 in DF in the first week or two of the semester

COURSE OBJECTIVES:  
This course is an economics elective, a required course for the Environmental Studies minor, and an elective in Xavier's Ethics/Religion and Society focus (part of the University core
Natural resource economics is an interdisciplinary field of economics aimed at addressing the relationships between human economies and natural ecosystems. Its main concern is the study of how an economy operates within the ecological constraints of the earth’s natural resources.

In examining these issues, this course will introduce the interconnected fields and models of ecological economics and environmental economics, both being subfields of economics concerned with theoretical and applied environmental issues. While the fields intersect extensively, environmental economics generally uses neoclassical analysis to focus on efficiency issues related to environmental problems, and ecological economics emphasizes the economy as a subsystem of the ecosystem, instead of vice versa, as well as the need to preserve natural capital.

If you cannot read assignments BEFORE class, I strongly recommend you take a different class. I will not be "going over" the reading, instead we will be discussing and analyzing ideas. If you haven’t read the material, your contributions will be (well, you know what) and this will be obvious to all of us. In addition to study and discussion of texts, the course will utilize project-based learning as well as writing assignments. In a course focused on natural resource economics, it is essential for students to get their hands dirty applying these ideas to real problems. If you cannot visit off-campus sites for project work, you can provide the behind-the-scenes research for others who can. There will also be some guest speakers and/or field trips (if we can find a time slot that works for nearly all of us).

Specific learning objectives include:
- relate our decisions and actions as economic actors at a variety of levels (individual, community, national, global) to environmental quality
- contrast questions of scale with questions of efficiency
- consider the economy's utilization of different types of natural resources (biotic and abiotic; stock-flow and fund-service; renewable, congestible, and nonrenewable)
- describe and understand ecosystem services and waste absorption issues
- understand and apply concepts of marginal extraction, external and user costs, excludability, rivalness, public vs. private goods, and open access regimes
- recognize and analyze examples of market failure (e.g., externalities such as climate change, water and air pollution, and solid waste; non-excludable/non-rival goods; distribution issues)
- evaluate environmental policies' impacts on welfare of future generations (e.g., substitutability of natural and human-made capital, morality of discounting the future)
- distinguish between the intrinsic value of natural resources and ecosystems to the economic value humans assign to them
- consider property rights in the context of the need to protect natural resource levels
- distinguish impact of environmental factors on cost-benefit analysis
- improve skills through project work, writing, discussion and analysis of texts

DISTRACTING ACTIVITIES/ DEVICES:
Please note that the following activities during class are distracting and disrespectful to the professor and to fellow students, and will negatively impact your grade:
- receiving or making phone calls or texts
- non-class computer or smartphone activity
- side conversations, etc.
Therefore, all phones are to be turned OFF during class, and use of a laptop
during class is restricted to students for whom this is recommended in writing by
the Learning Assistance Center.

**GRADING:** Final grades will be assigned as follows:

<table>
<thead>
<tr>
<th>Component</th>
<th>Weight</th>
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<tbody>
<tr>
<td>Exams (generally essay in format)</td>
<td>25%</td>
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<tr>
<td>Assignment Folders (problems, in-class activities, writing/other)</td>
<td>25%</td>
</tr>
<tr>
<td>Readings Journals and class participation</td>
<td>25%</td>
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<tr>
<td>Paper/Project Submission/Presentation</td>
<td>25%</td>
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<table>
<thead>
<tr>
<th>Grade</th>
<th>Percentage</th>
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<tbody>
<tr>
<td>A</td>
<td>(90+ %)</td>
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<tr>
<td>B</td>
<td>(80-89 %)</td>
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<tr>
<td>C</td>
<td>(70-79 %)</td>
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<tr>
<td>D</td>
<td>(60-69 %)</td>
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<tr>
<td>F</td>
<td>(below 60 %)</td>
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+- are not generally given, but may be given at discretion of instructor and will
generally only be given when it is to student's advantage; class participation may play a role.

**Notes:**
1. **Academic dishonesty** will not be tolerated; any work not your own should be properly cited (see University catalog, may results in failure for course and/or expulsion from University).
2. **Failure to take an exam** will result in a “0” grade. Prior permission must be obtained from the instructor for missing exams. Makeup exams are not generally given; in the event of an excused absence from an exam, the cumulative final exam may be given double weight in the student's final grade.
3. **Late assignments** that are not pre-approved will be marked down significantly and will not be accepted after one week without a doctor’s note indicating a significant medical issue.

**SYMPOSIA:**

There will be 3 symposia (on resources, models, and policy) for presentation of project results (dates on syllabus). Each will take most or all of the class period. Students may work in groups or as individuals (with my permission). A group presentation will be approximately 30 minutes, including discussion. Individual presentations will be 10-15 minutes. Presentation powerpoints should be of high quality and are due to me by the day prior to the scheduled presentation.

Students will write individual papers as background for the group presentation. Students may opt one of the following:

1) write a 10-15 research paper, with use of a government data source required
2) participate in a 12-hour mini-internship/community engagement placement, including 1/2 to 1 page journal entries for each visit (or activity, if you are doing tasks that do not require visits),
plus a 3-5 page reaction paper at the end of the project.

The week of March 27 will be reserved for project work (project work can be done at any point during the semester, but this week there will be no additional assignments).

Due dates for papers will be three days prior to the symposium papers will be posted or emailed to the class and are required reading for the class. Each student will be required to submit a written reaction to other groups' presentations.

COURSE SCHEDULE:

(Tentative, and subject to change, so if you miss a class, please contact another student to confirm the next class assignment, changes in due dates, and so on):

<table>
<thead>
<tr>
<th>Dates</th>
<th>Week</th>
<th>Topics</th>
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<tbody>
<tr>
<td>1-3</td>
<td></td>
<td>The individual, the economy and the environment: toward a personal ecological ethic</td>
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<tr>
<td>1/10,12</td>
<td>1</td>
<td>Survey of knowledge</td>
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<tr>
<td></td>
<td></td>
<td>Introduction to course, overview of natural resource challenges</td>
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<tr>
<td></td>
<td></td>
<td><strong>Reading:</strong></td>
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<td></td>
<td></td>
<td>Ch 1 DF, &quot;Why Study Economics?&quot;</td>
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<tr>
<td>1/17,19</td>
<td>2</td>
<td>Overview: the vision of natural resource economics, as viewed by both ecological and environmental economics subfields</td>
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<td><strong>Reading:</strong> Ch 2 DF, &quot;The Fundamental Vision&quot;</td>
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<td></td>
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<td>Juliet Schor, <em>Plenitude</em> (2010), Ch. 2, &quot;From Consumer Boom to Ecological Bust,&quot; pp. 25-65</td>
</tr>
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**CHOOSE A PROJECT/SYMPOSIUM THIS WEEK!**

Meeting #1 for project groups, Thurs. Jan. 19

| 1/24 | 3 | Human behavior, economics, ecology, and the pursuit of happiness |
|      |     | **Reading:** Ch 13 DF, "Human Behavior and Economics" |
Ch 4, "If You're So Rich, Why Aren't You Happy?" and Ch 5, "So What Does Make Us Happy?"

<table>
<thead>
<tr>
<th>Date</th>
<th>Reading</th>
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<tbody>
<tr>
<td>1/26</td>
<td>3</td>
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<tr>
<td></td>
<td>Introduction to environmental policy: steady-state economy, finite planet, efficiency, scale and distribution considerations</td>
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<tr>
<td></td>
<td>View the following 5 minute talk on youtube before class 1/26/12: &quot;Herman Daly Keynote Pt. 1,&quot; <a href="http://www.youtube.com/watch?v=l8k2Tnya_jE&amp;feature=related">http://www.youtube.com/watch?v=l8k2Tnya_jE&amp;feature=related</a></td>
</tr>
<tr>
<td></td>
<td>Reading: Ch 3 DF, pp. 48-57 only, &quot;Ends, Means, and Policy&quot; Ch 21 DF, &quot;General Policy Design Principles&quot;</td>
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4-5

**The XU campus and/or your neighborhood, the economy and the environment**

<table>
<thead>
<tr>
<th>Date</th>
<th>Reading</th>
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<tbody>
<tr>
<td>1/31, 2/2</td>
<td>4</td>
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<tr>
<td></td>
<td>Basic concepts for the ecosystem and the economy: laws of thermodynamics, stock-flow and fund-service resources, excludability and rivalness of goods and services</td>
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<tr>
<td></td>
<td>Reading: Ch 4 DF, &quot;The Nature of Resources and the Resources of Nature&quot; Kenneth Boulding, &quot;The Earth as a Spaceship,&quot; 5/10/1965</td>
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2/7, 2/9 | 5 |

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<thead>
<tr>
<th>Date</th>
<th>Reading</th>
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<tbody>
<tr>
<td></td>
<td>Abiotic resources and economics: fossil fuels, minerals, land, and solar energy: nonrenewables, recyclables, indestructibles</td>
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<tr>
<td></td>
<td>Reading: Ch 5 DF, &quot;Abiotic Resources&quot;</td>
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6-7

**The Cincinnati/tri-state region, the economy and the environment**

<table>
<thead>
<tr>
<th>Date</th>
<th>Reading</th>
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<tbody>
<tr>
<td>2/14, 16</td>
<td>6</td>
</tr>
<tr>
<td></td>
<td>Biotic Resources: ecosystem services, maximum sustainable yield, waste absorption capacity</td>
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<tr>
<td></td>
<td>Reading:</td>
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</tbody>
</table>
Ch 6 DF, "Biotic Resources"

2/21, 2/23  7  Limits to growth? Is growth distinct from development?

Reading:
E F Schumacher, Small is Beautiful: Economics as if People Mattered (1973), Pt I, Ch 3, "The Role of Economics" and Ch 4, "Buddhist Economics"
Ch 7 DF, "From Empty World to Full World"

2/28  8  MIDTERM - Tues, Feb. 28

3/1  8  SYMPOSIUM 1: RESOURCES, Thurs., March 1

SPRING BREAK 3/5-3/9

The state/midwest region, the economy and the environment

Reading:
Smart Grid in Ohio (Ohio Public Utilities Commission)

3/13, 15  9  Market Failures, pt 1: nonexcludable and/or nonrival goods, public goods, congestible goods, property rights, open access regimes ("tragedy of the commons"), external costs, Coase theorem, transaction costs

Reading: (Review Ch 8 & 9 DF if necessary)
Ch 8 DF, "The Basic Market Equation," pp. 128-135
Ch 10 DF, "Market Failures"

3/20, 22  10  Market Failures: Missing markets, intro to intertemporal discounting, extraction costs, marginal user cost, Hotelling rule, maximum sustainable yield & waste absorption capacity revisited

Reading:
Ch 10 DF, "Market Failures" (finish)
Ch 11 DF, "Market Failures and Abiotic Resources" pp. 194-200 only
Ch 12 DF, "Market Failures and Biotic Resources" pp. 214-216, 219-222, 226-231 only

3/27, 29  11-12  Project Work

The nation, the economy and the environment
Reading:
Lisa Jackson, Seven Priorities for EPA's Future

4/3, 10 11-12 Distribution of income and wealth issues, Pareto optimality, intertemporal issues, and related policy matters

Reading:
Ch 16 DF, "Distribution"

**EASTER BREAK 4/5-9**

4/12 12 SYMPOSIUM 2: MODELS - Thurs., April 12

13-14 The Earth, the economy and the environment

Reading:
United Nations Environmental Programme, Input to UN Conference on Sustainable Development Durban Platform, Convention on Climate Change, December 2011

4/17, 19 13 Introduction to global sustainability issues

Reading: Ch 18, 19 DF, "International Trade," "Globalization"
E F Schumacher, *Small is Beautiful: Economics as if People Mattered* (1973), Pt III, Ch 3, "Two Million Villages"

**SYMPOSIUM 3: POLICY - Thurs., April 19**

4/24, 26 14 What to do with it all? Can economics contribute to a personal ecological ethic?

View the following 50 minute talk on youtube before class 1/19/12 (start at 5:22, stop at 56:15 or watch the Q&A if you wish):

Reading:
Earth Day Canada/ Resources - Top 10 actions
Ch 22 DF, "Sustainable Scale"
E F Schumacher, *Small is Beautiful: Economics as if People Mattered* (1973), "Epilogue"

15 **FINAL EXAM**
10:20-12:30, Tues, May 1
Williams College of Business Mission Statement

“We educate students of business, enabling them to improve organizations and society, consistent with the Jesuit tradition.”

Our goal is for graduates of the Williams College of Business to be proficient in: Critical thinking; Ethical decision-making and assisting the less fortunate in society; Written and oral communication; The use of technology as it is used in business; Applying the business functions; and Understanding external sources of change and guiding change.