

## AEB 6413

### ECOLOGICAL ECONOMICS: THEORY AND APPLICATIONS

3 CREDITS

Location: 3124 McCarty Hall B

Tuesday, Periods E1-E3 - 7:20PM - 10:10PM

**Instructor**

 Clyde Kiker, Professor  
 McCarty Hall B, Room G-086A  
 392-1881, ext 323 .....cfkiker@ifas.ufl.edu  
**Office Hours:** 4:00 - 6:00PM Tuesday. Other times by appointment.

**Secretary**

 Mrs. Bodo Randrianasolo  
 McCarty Hall B, Room G-104C  
 392-1881, ext 325 .... brandrianasolo@ifas.ufl.edu

**Readings:** **Text** Daly, H.E. and J. Farley. 2004. Ecological Economics: Principles and Applications, Washington DC; Island Press.

**Other readings** will be placed on reserve in McCarty Hall B, Room G104 for check out.

***Class Activities and Proportion of Final Grade:***

Homework Assignments and quizzes and Class participation. ....	15%
Term paper. ....	50%
Mid-term test . . . . .	15%
Final Comprehensive Exam. ....	20%

**Letter Grades:**

A	90-100%	B+	85-89%
B	80-84% C+	75-79%	
C	70-74% D+	65-69%	
D	60-65% E	0-59%	

Requirements for letter grades may be lower; but will not be higher than indicated.

**Class Policies**


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**General Student Responsibilities:** Students will attend class, come prepared to participate in all class activities and turn in all work when due. Course grade will be decreased after 3 unexcused absences.

**Homework Assignments:** Assignments are intended to provide the student experience with tools being taught. They are due on time; late assignments will receive half credit. Some Assignments will be discussed in class and you will be expected to discuss the problems and this will count as part of your classroom participation.

**Class Preparation and Participation:** The student is expected to have read all selections and come to class ready to participate in class discussions. From time to time, a short-answer quiz on assigned material may be given.

**Term paper:** Each student will write a paper on a topic related to the class. While it is permissible for students to work together as teams in gathering information, each student will prepare his own paper. Papers are due on Tuesday, April 23, 2005.

**Mid-Term Test:** A Test will be given at mid-term on material covered up to that date. An unexcused absence from the exam will be counted as zero. If absence from exam is unavoidable, it must be requested, in writing, before the date of the exam.

**Final Comprehensive Exam:** The final exam is scheduled for Thursday, April 26, 2005 from 8:00 -10:00PM in McCarty B, Room 3124. An early exam will not be given. The exam may include all assigned & case study materials.

**Pictures:** To assist your instructor in getting names & faces together, you will be “mugged”. Ms. Nancy Baker, McCarty A, Room 1189 will take pictures in class during the first week of classes. Photographs are a requirement.

**Civility:** Every society has rules of behavior, and penalties for breaking those rules. For the coming semester, our class is going to be a small society. Obeying the rules of this society is called “civility”...let's all work together to make this society one within which we can accomplish our goals.

1. **It is rude to talk when someone else is talking. If you feel you must talk to someone, be respectful of your neighbors by leaving the classroom to do so.**
2. **If it goes beep, ring, or otherwise makes noise, turn it off before you come to class.**

**Academic Honesty:** As a result of completing the registration form at the University of Florida, every student has signed the following statement: "I understand that the University of Florida expects its students to be honest in all their academic work. I agree to this commitment to academic honesty and understand that my failure to comply with this commitment may result in disciplinary action up to and including expulsion from the University." We, the members of the University of Florida community, pledge to hold our peers and ourselves to the highest standards of honesty and integrity.

**Software Use:** All faculty, staff and students of the University are required and expected to obey the laws and legal agreements governing software use. Failure to do so can lead to monetary damages and/or criminal penalties for the individual violator. Because such violations are also against Universities policies and rules, disciplinary action will be taken as appropriate.

**Examinations:** Your exams should include the following statement:

“On my honor, I have neither given nor received unauthorized aid on this examination.”

**Students with Disabilities:** Students requesting classroom accommodations must first register with the Dean of Students Office. The Dean of Students Office will provide documentation to the student who must then provide this document of the Instructor when requesting accommodations.

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# ECOLOGICAL ECONOMICS: THEORY AND APPLICATIONS

## AEB 6413

3 CREDITS

**Please note:** The following are topics for a previous term presented as examples of topics that may be considered. A new set of topics will be developed to meet students' needs once the class has met.

**Purpose:** The course is for graduate students in biological and social sciences who have interests in biological conservation and human development. Typically, the students will have had little or no background in economics. The intent is to focus on living systems, their preservation and the role of economic development in their preservation. The course's goal is not to develop deep competency in environmental or natural resource economics - there are other courses available for this purpose. Instead, the goal is to develop potential in the students for more clearly understanding the relationship of economic systems to biological systems while introducing them to an intermediate level of economic principles. The competencies developed will be more than sufficient to work effectively with economic information and, if the student is interested, to take other graduate level natural resource and environmental economic courses.

The specific purpose is to develop the student's foundation of knowledge concerning the interaction of economic systems and ecological systems. In establishing the foundation, the student will develop understanding of the role of markets, institutions, organizations and public policies, as well as developing an intermediate level of skill in using economic tools in performing analyses of natural resource and ecological problems.

### Topics and Readings:

#### ❖ **Economic Systems and their Relationship to Environmental and Institutions**

Harris, J.M. 2002. Environmental and Natural Resource Economics., Houghton Mifflin. Boston. Pages 1-34 and 121-135.

Costanza, R., H. E. Daly and J. A. Bartholomew. 1991. "Goals, Agenda, and Policy Recommendations for Ecological Economics." In R. Costanza, ed., Ecological Economics, Columbia University Press. Pages 1-20.

Edward - Jones, G., B. Davies and S. Hussain. 2000. Ecological Economics. Blackwell Science. Pages 3-30.

#### ❖ **Ecological Fundamentals and Systems**

Kiker, M. 2000. " Historical Development of Systems Thinking". Faculty of Management Studies, University of Natal, Durban, S.A. Pages 28-52.

Holling, S. C. 1995. "What Barriers? What Bridges?", and "Barriers Broken and Bridges Built: A Synthesis". In Barriers and Bridges to the Renewal of Ecosystems and Institutions, Columbia University Press. Pages 3-34 and 489-532.

Edward-Jones et al., Pages 98-118.

Harris, Pages 159-172.

#### ❖ **Economic Fundamentals**

Edwards-Jones et al., Pages 30-44 and pages 63-83.

Prato, Pages 27-53.

Gowdy, J. and S. O'Hara. 1995. Economic Theory for Environmentalists. Pages 1-118.

Chapman, D. 2000., Environmental Economics: Theory, Application, and Policy. Addison-Wesley, Pages 3-24.

❖ **Public and Private Decision Making: The Role of Benefit/Cost Analysis**

Edwards-Jones et al., Pages 121-138 and Pages 153-169.

Harris, Pages 93-118.

Chapman, Pages 57-70.

Dixon, J. A. and P. B. Sherman. 1990. Economics of Protected Areas: A New Look at Benefits and Costs. Island Press. Pages 1-49.

❖ **Institutions and Property Dynamics**

Edwards-Jones, et al., Pages 45-59.

Bromley, D. 1989. Economic Interests and Institutions. Blackwell. Pages 1-5 and 185-220.

Hanna, S. and M. Munasinghi, eds. 1995 Property Rights and the Environment. The World Bank. Pages 3-29.

Young, M. 1992. Sustainable Investment and Resource Use. Parthenon Press. Pages 91-120. (The Design of Property Right Systems).

Harris, Pages 76-92.

❖ **Renewable Resource Management and Exhaustible Resource Use**

Edward-Jones et al., Pages 187-225.

Hartwick, J. M. and N.D. Olewiler, 1998. The Economics of Natural Resource Use. Addison Westley. Pages 57-137.

❖ **Methods and Measuring Economic Value**

Edward-Jones et al., Pages 84-97.

Prato, Pages 301-334.

Chapman, Pages 39-56.

Milon, J.W. and G. Johns. 1982. An Handbook for Economic Analysis of Coastal Recreation Projects. Report No. 45, Florida Sea Grant College, University of Florida. Pages 8-59.

Harris, Pages 403-423.

❖ **International Economics, Trade and Environment**

Kreinin, M.E., 1983. International Economics: A Policy Approach. Harcourt Brace Jovanovich. Pages 1-68.

Chapman, Pages 265-348.

❖ **Economics of Sustainability**

Harris, Pages 424-442.

Chapman, Pages 349-402.

Hartwick and Olewiler, Pages 392-418.

**Additional Books for Reading**

Prato, Tony. 1998. Natural Resources and Environmental Economics. Iowa State Press.

Chapman, Duanne. 1999. Environmental Economics: Theory, Application, and Policy. Addison-Wesley Longman.

Hartwick, John M., and Nancy D. Olewiler. 1998. The Economics of Natural Resource Use. 2<sup>nd</sup> Edition. Addison-Wesley.

Tietenberg, Tom. 1992. Environmental and Natural Resource Economics. Harper Collins.

Pearce, David W., and R. Kerry Turner. 1990. Economics of Natural Resources and the Environment. Johns Hopkins University Press.

Dixon, John A., and Paul B. Sherman. 1990. Economics of Protected Areas: An New Look at Benefits and Costs. Island Press.

**SCHEDULE OF TOPICS**

The course is taught in one three-period session per week, so lectures are listed by week.

<b>Week</b>	<b>Topic</b>
1	Introduction to Ecological Economics
2	Ecological Fundamentals
3	Ecological Systems
4	Economics Fundamentals: Economic Efficiency
5	Benefit-Cost Analysis and Cases
6	Institutions and Property Dynamics
7	Economics Fundamentals: Exhaustible Resources and Dynamic Efficiency
8	Renewable Resource Management: Fisheries
9	Mid Term Exam
10	Renewable Resource Management: Wildlife
11	Renewable Resource Management: Water
12	Renewable Resource Management: Landscapes
13	Measurement of Economic Value
14	International Trade and Environment
15	Economics of Sustainability
16	Presentation of student papers



Counseling Related to Personal Issues

The University and Gainesville Community offer a number of personal counseling services/resources for students having personal problems, or lacking clear career and academic goals which interfere with their academic performance. Contact the appropriate agency listed below.

- ❖ Alachua County Crisis Center ..... 264-6789
Crisis Line phone counseling is available 24 hours a day.
218 SE 24th Street, Gainesville
http://crisiscenter.alachua.fl.us/
❖ Career Development Assistance and Counseling ..... 392-1601
Career Resource Center M-F; 8:00am - 4:30pm
PO Box 118507, 1st Floor, J.W. Reitz Union
www.crc.ufl.edu
❖ Corner Drug Store ..... 334-3800
For assistance with drug and alcohol related problems.
1300 NW 6th Street, Gainesville
Monday - Thursday, 8:00am - 7:30pm
Friday, 8:00am - 5:00pm
❖ International Student Services ..... 392-5323, ext. 600
Assistance is provided for International students at the University.
123 Grinter Hall
Monday - Friday, 8:00am - 5:00pm
http://www.ufic.ufl.edu/index.htm
❖ The Dean of Students Office, formerly Office for Student Services ..... 392-1261
A staff member is available to assist students.
P202 Peabody Hall
Monday - Friday, 8:00am - 4:30pm
http://oss.ufl.edu/
❖ Student Health Services ..... 392- 1161
A counselor is available to assist students to work through personal issues.
Student Health Care Center, PO Box 117500 (1 Fletcher Drive)
Monday - Friday, 8:00am - 4:30pm
http://shcc.ufl.edu/
Center for Sexual Assault/Abuse Recovery and Education ..... 392-1161, ext. 4231
A Counselor is on-call 24 hours a day to assist with sexual assault issues.
Student Health Care Center
Monday - Friday, 8:00am - 4:30pm
Weekends, On-Call
http://shcc.ufl.edu/HealthEd/sexuality.htm
Campus Alcohol and Drug Resource Center ..... 392-1161
Information on drug and alcohol counseling is available to the University Community.
P202 Peabody Hall
Monday - Friday, 8:00am - 4:30pm
http://shcc.ufl.edu/cadrc/dandi.htm
Students Mental Health Services ..... 392-1171
A Mental Health Counselor is on-call 24 hours a day to respond to emergencies.
Room 245, Infirmary Building
Monday & Friday, 8:00am - 5:00pm; Tuesday, Wednesday & Thursday, 8:00am - 6:00pm
http://shcc.ufl.edu/smhs/
❖ University Counseling Center ..... 392-1575
A counselor is available to assist students to work through personal issues.
P301 Peabody Hall
Monday - Friday, 8:00am - 5:00pm
www.counsel.ufl.edu

Disability Clause: Any student who feels that an accommodation for a disability is in order is encouraged to consult with the instructor during the first week of class.

TERM \_\_\_\_\_

Year \_\_\_\_\_

AEB 6413

**ECOLOGICAL ECONOMICS: THEORY AND APPLICATIONS**

Name: \_\_\_\_\_ Phone Number: (    ) \_\_\_\_\_

Class: \_\_\_\_\_ Email: \_\_\_\_\_

Major/Minor: \_\_\_\_\_ Hometown: \_\_\_\_\_

**PREVIOUS COURSES IN ECONOMICS AND/OR FOOD AND RESOURCE ECONOMICS.**

*(Give approximate names of courses)*

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**PREVIOUS COURSES IN SUBJECTS CONCERNED WITH NATURAL OR HUMAN RESOURCES.**

*(Give approximate names of courses)*

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**LIST THREE ENVIRONMENTAL, NATURAL RESOURCE, OR ECOLOGICAL ISSUES OF INTEREST TO YOU.**

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**BROAD GOAL(S)**

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**Text (Daly and Farley) Reading Schedule**

<b>Week</b>	<b>Date</b>	<b>Readings</b>
1	Jan 4 + 6	Introduction and Chapter 1
2	Jan 11 +13	Chapters 2 and 3
3	Jan 18 + 20	Chapters 4 and 5
4	Jan 25 + 27	Chapters 6 and 7
5	Feb 1 + 3	Chapters 8 and 9
6	Feb 8 + 10	Chapters 10, 11, and 12
7	Feb 15 + 17	Chapters 13 and 14
8	Feb 22 + 24	Chapters 15 and 16
9	Mar 1 + 3	Spring Break
10	Mar 8 + 10	Chapters 17 and 18
11	Mar 15 + 17	Chapter 19
12	Mar 22 + 24	Chapters 20 and 21
13	Mar 29 + 31	Chapters 22 and 23
14	Apr 5 + 7	Looking Ahead

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Economic Concepts from Previous Courses

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The following is a list of economic concepts from previous courses that we will use this term. Please review these concepts in your texts and notes. (The concepts are in no particular order).

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| <input type="checkbox"/> Supply                      | <input type="checkbox"/> Total Benefits                  |
| <input type="checkbox"/> Demand                      | <input type="checkbox"/> Total Costs                     |
| <input type="checkbox"/> Marginal Value              | <input type="checkbox"/> Net Benefits                    |
| <input type="checkbox"/> Marginal Cost               | <input type="checkbox"/> Discount Rate                   |
| <input type="checkbox"/> Market Equilibrium          | <input type="checkbox"/> Present Value                   |
| <input type="checkbox"/> Market Clearing Price       | <input type="checkbox"/> Future Value                    |
| <input type="checkbox"/> Consumer Surplus            | <input type="checkbox"/> Price Elasticity                |
| <input type="checkbox"/> Producer Surplus            | <input type="checkbox"/> Income Elasticity               |
| <input type="checkbox"/> Total Return                | <input type="checkbox"/> Gross National Product          |
| <input type="checkbox"/> Total Cost                  | <input type="checkbox"/> Trade Surplus/Deficit           |
| <input type="checkbox"/> Net Return                  | <input type="checkbox"/> Current Account Surplus/Deficit |
| <input type="checkbox"/> Net Revenue                 | <input type="checkbox"/> Federal Reserve/Money Supply    |
| <input type="checkbox"/> Marginal Revenue            | <input type="checkbox"/> Income Distribution             |
| <input type="checkbox"/> Marginal Value Productivity | <input type="checkbox"/> Property Rights                 |
| <input type="checkbox"/> Economic Rent               |  |

## Tentative Class Topic Schedule

**January 4 - 18**Economics of Water Resources (slowly renewable resources)

- Consumer Use (private good)
- Florida Hydrology ( the natural resource)
- Irrigation (derived demand)
- Water in Nature (public good)
- Recreation (private use of public good)
- Water Management Distracts (resource institutions)
- Water Allocation (interface of public and private goods)

**January 25 - February 1**Land Economics

- Agriculture and Forestry (private use)
- Net Returns (economic rent)
- Land Value (time value)
- Urban Use and Amenities (private gain from public resources)
- Land Markets (property and economic rent)

**February 8 - 15**Ecologic and Wildlife Economics

- Ecological Services (interconnectedness of biophysical systems)
- Recreation (public resources/private gain)
- Nature As Amenities (more public resources/private gain)

**February 22 - March 1**Fisheries Economics (functionality renewable resources)

- Dominican Fishery (the resource)
- Individual Financial Gain (individual motivation)
- Depletion (collective impact)
- Dominican Tourism (joint resource use)
- Fisheries Regulation and Allocation (who gains and who loses)

**March 8 - 15**Fossil Fuels (depletable resources and thermo - dynamics)

- Micro-Scale Use (private good and market allocation)
- Macro-Scale Implications (technology and dynamics)
- Economic Surplus (basis of standard of living)
- Global Markets (who gains and who loses)
- Effects of Use (pollutants and consequences)

**March 22- April 28**

- Conservation and Development
- Other topics

**April 12 and 19**

- Paper Presentations