

# **ECO 311: ENVIRONMENTAL ECONOMICS**

Fall 2013 TR 2:00 – 3:20 208 Harris

Instructor: **Steven J. Dundas**

Office: **227 Harris Hall**

Email: [sjdundas@meredith.edu](mailto:sjdundas@meredith.edu)

Secondary Email: [sjdundas@ncsu.edu](mailto:sjdundas@ncsu.edu)

Office Phone: **(919) 760-8130**

Website: <http://www.stevenjdundas.com>

Course Website: <https://courses.meredith.edu> (**Blackboard**)

Office Hours: **TR 1:00-2:00** or by email appointment

## **Prerequisites**

ECO 100 and a course in statistics are highly recommended.

## **Course Description**

This course focuses on the microeconomic analysis of society's pursuit of sustainable environmental outcomes, using both the private (market) tools and public (government) policies. Market solutions are often inefficient with respect to the natural environment, and this course examines the ways that governments may enhance both the efficiency and equity with which environmental resources are utilized. Attention is given to topics such as global climate change, renewable energy vs. fossil fuels, hydraulic fracturing, wilderness preservation, wetlands, biodiversity, and water quality. Topics also include natural resource management, with particular focus on ocean fisheries and oil production.

## **Course Objectives & Expected Learning Outcomes**

In this course, you will learn techniques and concepts in the economic analysis of environmental problems. The objectives for this course are to:

- Recognize how economics can inform and improve environmental policy
- Apply principles of economics to the environment
- Understand the concepts of market equilibrium, market failure, and externalities
- Analyze environmental issues within a graphical economic modeling framework
- Compare and evaluate effective policy solutions to environmental problems
- Increase your ability to define environmental problems and analyze information

## **Required Text**

*Markets and the Environment* (2007) Island Press, Washington, DC.

Authors: Nathaniel Keohane and Sheila Olmstead

This is an inexpensive book that will provide a great foundation for the concepts of this course. Lectures and discussion in class will generally follow this textbook; however, the book does not contain ALL the material needed to master this course. Lecture notes and additional readings will contain more information than the textbook and you are responsible for this material as well. Additional required readings will be posted as PDF files on the course's Blackboard site or handed out in class.

**Please note:** Assigned readings are essential to your success in this course.

### **Evaluation**

The work required for this class is based on 500 points. Your final grade will depend on the following:

- Mid-term exam #1 100 points (20%)
- Mid-term exam #2 100 points (20%)
- Final Exam (cumulative) 150 points (30%)
- Five problem sets (20 points each) 100 points (20%)
- In-class assignments/Pop-quizzes (5 points each) 50 points (10%)

You should not miss any exams. No programmable calculators or cell phones will be allowed during exams. **Makeup exams are given only under extraordinary circumstances.** The following must occur in order for a makeup exam to be administered: (1) you must contact me prior to the exam to let me know you will not be attending and the reason why; (2) the makeup exam must be taken before the in-class exam is returned to students (i.e., within 48 hours); and (3) a written excuse from a doctor must be presented (and this will be verified by a follow-up phone call). **You may not miss or reschedule the final exam under any circumstances.**

Problem sets are **due at the beginning of class** on the dates specified below. **LATE ASSIGNMENTS WILL NOT BE ACCEPTED.** I encourage you to work with your fellow classmates on these assignments, but **you must turn in your own work.** It is in your best interest to show all of your work on these assignments. For example, if the answer is 5 and all you write down is 4, you lose all points for that problem. But if you show your work and I can see that you understood the problem but made a simple math mistake, you will still receive nearly full credit. All problem sets are required to be **stapled** together. This prevents the possibility of losing pages and makes grading much easier. **Two points** will be deducted if an assignment is unstapled. Late assignments **will not** be accepted. There **will not** be make-ups for in-class assignments/pop quizzes. University policies on make-up work and attendance policy are located here: <http://www.meredith.edu/handbook/academic.htm>

All of the following dates are subject to minor changes if we get behind on material with the exception of the final exam:

### Exam Dates

Mid-term exam #1  
Mid-term exam #2  
Final Exam

Thursday, September 26<sup>th</sup>  
Tuesday, November 5<sup>th</sup>  
Friday, December 6<sup>th</sup>, 1:00-4:00 p.m.

### Problem Set Due Dates

Problem Set #1  
Problem Set #2  
Problem Set #3  
Problem Set #4  
Problem Set #5

Tuesday, September 10<sup>th</sup>  
Tuesday, September 24<sup>th</sup>  
Tuesday, October 15<sup>th</sup>  
Tuesday, October 29<sup>th</sup>  
Thursday, November 14<sup>th</sup>

### In-Class Assignments/Quizzes

Ten (10) In-Class Assignments/Quizzes will be given at random throughout the semester. Some will be individual efforts while others will be done in groups of 4-5 people. No makeups for in-class assignments will be given.

**Please note: I DO NOT offer extra credit opportunities on an individual basis**, so please do not ask. If you are struggling with the course material, make the effort to come see me sooner rather than later.

### Grading Scale

Your final course letter grade will be based on your course average and assigned according to the grade scale in the table below. I do not start the semester planning to use any grading curves, but I may do so if class performance warrants it.

A+:	98-100
A:	92-98
A-:	90-92
B+:	88-90
B:	82-88
B:	80 - 82
C+:	78-80
C:	72-78
C-:	70-72
D+:	68-70
D:	62-68
D-:	60-62
F:	60 or lower

## **Course Policies**

I have scheduled open office hours each week and I am also available by appointment subject to my availability. I also hold office hours on Monday and Wednesday morning at my office nearby at NC State if needed. **Individual office visits may be one of the most productive parts of the course for you if you are struggling with the material.** Don't forget...I am here to help.

**Class attendance** is not required; however, you are responsible for all material covered in class, regardless of whether you decide to attend. I **DO NOT** give out copies of my notes. If you miss a class, you will need to get the notes from a classmate. Additionally, unscheduled in-class assignments/pop-quizzes will be given throughout the semester so unexcused absences have the potential to harm your final grade.

In terms of classroom etiquette, I have a couple very simple rules: Please turn your cell phones, iPads, and all other electronic devices off and keep them off of your desk. You will not need any of these devices during class. Laptop computers in classroom have proven to be disruptive, distracting, and counterproductive for all concerned. Accordingly, except in extraordinary circumstances, laptop computers will not be used in class. If you wish an exception to this policy, you must seek and receive express permission, in writing, in advance. I expect you to engage in class – or at the very least, you should not be a distraction by being rude. If you cannot follow these two basic rules, you will be asked to leave.

## **General Course Outline**

This is a general course outline and subject to additions and subtractions. Please reference the Moodle site for the reading list and assignments. “KO” in the outline below refers to the required text. All other reading are available as PDF files on the Moodle site. You will need Adobe Reader to access the readings. If you do not have this program, you can download it for free here: <http://get.adobe.com/reader/>

### **Section 1: What is Environmental Economics?**

KO: Preface and Chapter 1  
Fuller & Stavins Article  
Rescuing Environmentalism – *Economist* Article

### **Section 2: How Markets Work**

KO: Chapter 4  
Tietenberg PDF

### **Section 3: Externalities**

KO: Chapter 5, pp 65-70.  
Harris PDF  
Is Gasoline Under-Taxed in the United States?

Freakanomics Article

#### **Section 4: Special Topics – Energy & Gasoline**

Department of Energy Annual Energy Review

#### **Section 5: Pollution Control Model**

KO: Chapter 2, pages 11-27

#### **Section 6: Public Solutions to Externalities: Standards, Taxes and Permits**

KO: Chapter 8, pages 129-152

KO: Chapter 9

KO: Chapter 10

Cap and Trade in California

Ian Parry Article

#### **Section 7: Special Topics - Climate Change**

Climate Science: What we know

#### **Section 8: Private Solutions to Externalities: The Coase Theorem**

KO: Chapter 8, pp. 126-129

California Solar Shade Law

#### **Section 9: Benefit-Cost Analysis**

KO: Chapter 2, pp. 28-30

KO: Chapter 3, pp. 43-53

Boardman PDF

Goulder & Stavins Article

#### **Section 10: Non-Market Valuation**

KO: Chapter 3 pp. 31-43

Non-market valuation website

Exxon Valdez CV Study

Portney Article

Value of a Statistical Life article

#### **Section 11: Special Topics - Hydraulic Fracturing**

Two Hedonic studies of Hydraulic Fracturing in Pennsylvania

The Economic Impact of Shale Gas Extraction  
Regulation Hydraulic Fracturing in Shale Gas Plays

**Section 12: Public Goods**

KO: Chapter 5, pages 70-76.

**Section 13: Open Access Resources**

KO: Chapter 5, pages 76-83.  
Tragedy of the Commons Article

**Section 14: Natural Resource Extraction**

KO: Chapter 6

**Section 15: Special Topics - Fisheries**

World's Fish Supply Running Out?  
Impacts of Biodiversity Loss on Ocean Ecosystem Services

**Academic Integrity**

Students are required to comply with the honor system of Meredith College found at <http://www.meredith.edu/handbook/honor.htm>

All Meredith students are expected to abide by the following Honor Pledge: "I do solemnly pledge my honor that as long as I am a student at Meredith College, I will faithfully uphold the principles of the Honor Code and will respect and observe the procedures and requirements of the Honor System. I also pledge my support to our system of self-government, an integral part of our way of life at Meredith College. I make this pledge in view of my fellow students thus signifying our high resolve to keep our honor forever sacred and our self-government forever strong."

It will be my understanding and expectation that your signature on any test or assignment means that you have abided by this pledge.

**Class Evaluations**

Online class evaluations will be completed on the last day of class before finals. All evaluations are confidential; instructors will not know how any one student responded to any question, and students will not know the ratings for any instructors. You will receive an email containing a login name and password to your Meredith College address when the survey is ready to be completed,

More information about course evaluations:

<http://www.meredith.edu/techserv/courseval/default.htm>

### **Accommodations for Disabilities**

Reasonable accommodations will be made for students with documented disabilities. In order to receive accommodations, students must go through the Counseling Center/Disability Services office. Disability Services is located in 106 Carroll Hall and can be reached at 760-8427 or [disabilityservices@meredith.edu](mailto:disabilityservices@meredith.edu). For more information see the website at

<http://www.meredith.edu/students/counsel/disability>

### **Inclement Weather Policy**

In case of class cancellations resulting from inclement weather, the College will run public announcements on local radio and television stations. Information about class cancellations is available on the Meredith website [www.meredith.edu](http://www.meredith.edu) and by calling the inclement weather phone number, 919-832-8878. In the event the College does not cancel classes, individual instructors have the option of canceling classes, if deemed necessary.

### **School of Business Code of Student Conduct**

Students in the School of Business student are expected to meet the following standards of behavior as a part of their preparation for a successful career.

Operate with integrity in dealings with faculty and other students

- Develop personal ethical standards that reflect awareness that honesty is a way of life
- Treat other students and faculty with courtesy, dignity, and respect
- Value individual and cultural differences
- Engage in open and honest discourse

Engage the learning materials with appropriate attention and dedication

- Attend class regularly
- Be on time to class and meetings
- Meet deadlines for assignments

Maintain engagement when challenged by difficult learning activities

- Persevere when encountering difficult material or assignments
- Integrate principles, concepts, and information acquired in other courses into cases, discussions, or assignment required in another

Contribute to the learning of others

- Make meaningful contributions to class discussions
- Participate in collaborative learning and cooperate with others

Perform to standards set by the faculty

- Prepare all assigned written work in a professional manner.

- Use language appropriate to the situation and the listener

### **School of Business Mission Statement**

Our mission is to provide an academically-challenging learning experience that develops critical-thinking skills in all areas of business administration, and which emphasizes teamwork, leadership, communication skills, and ethical decision-making. Excellent teaching is complemented by strong, collaborative faculty/student relationships, by faculty scholarship that enhances our curriculum, and by service to the College and to the central North Carolina region.

### **School of Business Undergraduate Learning Goals**

Undergraduate programs in the School of Business are designed to empower women to lead with integrity by developing the following competencies:

#### **WRITTEN COMMUNICATION**

- Graduates will effectively convey ideas, concepts, and quantitative data in written form.

#### **ORAL PRESENTATION**

- Graduates will possess excellent speaking ability through voice and body language. Additionally, they will be able to execute a well-structured and well-designed visual presentation.

#### **CRITICAL THINKING**

- Graduates will describe the main issues or themes in a business problem, question, or case and identify relevant information; analyze relationships among concepts or data using qualitative and quantitative approaches; formulate alternative courses of action; and express well-reasoned conclusions.

#### **ETHICAL AWARENESS**

- Graduates will engage in ethical reflection distinguishing legal and ethical issues and recognizing interrelationships. They will be able to make choices when confronted with ethical dilemmas and propose solutions.

#### **LEADERSHIP AND MANAGEMENT SKILLS**

- Graduates will develop insight into their own leadership style. They will work effectively with others using team building and collaboration to accomplish group tasks.