

**AEDE 4310 – Environmental and Resource Economics– Fall 2018**

**TH 9:35 – 10:55 in Howlett 164**

**Professor Contact**

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AED Economics

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**TA Contact**

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Hours: Wednesdays 1230 to 230 or by appt.

**Office Hours:** Wednesdays: 1030-1130 or by appointment.

The best way to reach me is via email. I am also available outside of posted office hours on an appointment basis. Please email me to set up additional meeting times as needed.

**Course Description**

This course introduces the concepts and development of Environmental and Resource Economics with applications to real world problems. Topics covered will include property rights and land use, sustainability, pollution control, nonrenewable and renewable resource management, climate change, as well as market mechanisms and market shortcomings. At the end of this course you should be able to:

- Discuss the role of economics in environmental and resource challenges
- Describe the limits of markets as mechanisms to manage environmental and resource problems
- Discuss real-world challenges and potential policy responses
- Carry-out basic analysis of economic problems applied to environment and resource issues

All students are expected to participate in class discussions and be prepared to engage in discussions of real-world problems.

**Prerequisites**

All students are expected to have taken at least one course in microeconomics. I will briefly review key concepts during the first portion of the course.

**Helpful Textbooks**

Tietenberg, Tom and Lynne Lewis. Environmental & Natural Resource Economics (10th Edition), Pearson, Addison-Wesley, 2014. [You can use older/newer editions]

Additional readings are listed on the readings list with asterisk (\*) and available on Carmen.

**Reference Textbooks (not required and excerpts available on Carmen)**

Ward, Frank. Environmental and Natural Resource Economics, Pearson, Prentice Hall, 2006.

O’Sullivan, Arthur. (2008). Urban Economics, 7<sup>th</sup> ed. Irwin/McGraw Hill

O’Connor, Margin. (1998). Ecological-Economic Sustainability. In Faucheux, Sylvie and Martin O’Connor, Valuation for Sustainable Development. Edward Elgar.

Hartshorn, Truman A. (1980). Interpreting the City, 1<sup>st</sup> ed. John Wiley and Sons

**Grading**

Grading will consist of six homework assignments, two in-class exams, a final and participation. Participation will be based on Carmen quizzes with only the 8 highest counted. There will be approximately 10 Carmen quizzes throughout the semester and each will only be available for 1 week. Each exam will contain a small number of multiple choice questions pulled from these online quizzes.

Grades are based as follows:

	<u>Each</u>	<u>Components/Number</u>	<u>Total</u>
Individual Homework Assignments (6):	5%	6	30%
In-Class Exams (2):	20%	2	40%
Final Exam:	20%	1	20%
<u>Quizzes on Carmen:</u>			<u>10%</u>
Total:			100%

The grading scale used for this course is:

<b>A</b>	<b>93-100</b>	<b>C</b>	<b>73-76.9</b>
<b>A-</b>	<b>90-92.9</b>	<b>C-</b>	<b>70-72.9</b>
<b>B+</b>	<b>87-89.9</b>	<b>D+</b>	<b>67-69.9</b>
<b>B</b>	<b>83-86.9</b>	<b>D</b>	<b>60-66.9</b>
<b>B-</b>	<b>80-82.9</b>	<b>F</b>	<b>&lt;60</b>
<b>C+</b>	<b>77-79.9</b>		

### **Homework and Exam Policy**

All homework is due at **THE BEGINNING** of class on the due date. **NO** late homework will be accepted without a verifiable excuse that is approved by me (family death, etc). I will not give makeup exams due to illness or other absence. If your absence from class is associated with an instructor approved reason I am willing to move the weight of the missed exam to the remaining exams and final. This will be done on a case by case basis.

All homework must be your own work. However, I fully expect students to work together in discussing problems so long as answers are not copied between students.

### **Academic Misconduct**

Copying any part of someone else's work (homework, quizzes, tests, exams, etc) and handing it in as your own work is academic misconduct and has serious consequences at this university. Collaboration (getting together with other students to discuss **HOW** to solve problems) is encouraged. You must do the work **on your own** and formulate your own responses.

It is the responsibility of the Committee on Academic Misconduct to investigate or establish procedures for the investigation of all reported cases of student academic misconduct. The term "academic misconduct" includes all forms of student academic misconduct wherever committed illustrated by, but not limited to, cases of plagiarism dishonest practices in connection with examinations. Instructors shall report all instances of alleged academic misconduct to the committee (Faculty Rule 3335-5-487). For additional information, see the Code of Student Conduct.

### **Disability**

Any student who feels s/he may need an accommodation based on a disability should contact the instructor during the first week of class to discuss specific needs. Students with disabilities that have been certified by the Office for Disability Services will be appropriately accommodated, and should inform the instructor as soon as possible of their needs. The Office of Disability Services is located in 150 Pomerene Hall, 1760 Neil Avenue; telephone 292-3307, TDD 292-0901; <http://www.ods.ohio-state.edu/>.

**Course Outline (subject to change)**

Week	Day	Topics	Homeworks	Week	Day	Topic	Homeworks
1	T (8/21)	What is Env. and Resource Econ?		9	T (10/16)	Land Use Issues - Forests	<b>HW 3 Due / HW 4 Assigned</b>
	H (8/23)	Working through a real-world problem			H (10/18)	Renewable Resources	
2	T (8/28)	Microeconomics: Demand and Supply		10	T (10/23)	Exam review	<b>HW4 Due</b>
	H (8/30)	Microeconomics: Markets	HW 1 Assigned		H (10/25)	<b>Exam 2</b>	
3	T (9/4)	Markt Failures		11	T (10/30)	Air Pollution - Permits	
	H (9/6)	Public Goods			H (11/1)	Zoning	
4	T (9/11)	Discounting	<b>HW 1 Due</b>	12	T (11/6)	Challenges: Population	HW 5 Assigned
	H (9/13)	Valuing the Environment	HW 2 Assigned		H (11/8)	Challenges: Suburbanization	
5	T (9/18)	What is Efficiency?		13	T (11/13)	Challenges: Developing Countries	<b>HW 5 Due</b>
	H (9/20)	Non-Renewable Resources	HW 2 Due		H (11/15)	Case Study: Shale Gas	
6	T (9/25)	Exam review		14	T (11/20)	Case Study: Economic Valuation	
	H (9/27)	<b>Exam 1</b>			H (11/22)	No Class - Thanksgiving	
7	T (10/2)	Sustainability and Recycling		15	T (11/27)	Case Study and Concept Review	<b>HW 6 Due</b>
	H (10/4)	Water as a Resource	HW 3 Assigned		H (11/29)	Case Study and Concept Review	
8	T (10/9)	Land Use and Infrastructure		16	T (12/4)	Course review	
	H (10/11)	No Class - Fall Break		<b>FINAL</b>	F (12/7)	<b>Final Exam - 8am to 945am</b>	

## **Course Readings (subject to additions)**

(\* denotes a recommended reading with potential for class discussion)

### **Week 1: Course Introduction**

\*TL - Chapter 1

### **Week 2: Microeconomics Review**

Any intro textbook to microeconomics

O'Sullivan (pp 429-432; 443-449)

### **Week 3: Problems with Markets**

\*TL - Chapter 2

### **Week 4: Determining Value**

\*TL - Chapters 3, 4

### **Week 5: Scarce Resources**

\*TL - Chapters 5, 6

### **Week 6: Exam 1**

Exam Review and Exam

### **Week 7: Sustainability and Water**

\*TL - Chapters 7, 8, 9

Heimlich et al.

O'Connor (pp 19-29)

### **Week 8: Land Use**

\*TL - Chapter 10

\*O'Sullivan (pp 226-235)

Hartshorn (pp 210-223)

Geist (pp 41-70)

**Week 9: Land Use and Fisheries**

\*TL - Chapters 11, 12

\*Ramankutty (pp 9-39)

**Week 10: Exam 2**

Exam Review and Exam 2

**Week 11: Pollution and Hazardous Waste**

\*TL - Chapters 14, 15

**Week 12: Emerging Challenges**

\*TL - Chapter 16

\*O'Sullivan(pp 175-180)

\*O'Sullivan(pp 196-218)

\*O'Sullivan (pp 235-243)

Nechyba and Walsh

**Week 13: Emerging Challenges**

\*Pachauri (pp 71-90)

Lambin et al.

**Week 14 and 15: Case Studies**

Carmen documents

**Week 16: Course Review**