This is an introductory course in environmental economics. The course is designed to give you an understanding of current environmental issues, and the role of markets and governments in the regulation of these issues. My intention is to provide you with the economic tools to understand important policy questions. We will focus on issues related to property rights, externalities, sustainable development, depletable resources, energy transitions, water, fisheries, air pollution, and climate change. The format of the class consists of formal lectures using slides, in-class problem solving, and group discussions. The detailed outline is below.

The objectives of this course are twofold. First, to familiarize you with a set of issues and questions that are central to environmental economics, and that are also exciting and important current issues. And, second, to develop economic tools to address important problems in environmental economics.
Prerequisites: Econ 103, Principles of Microeconomics. Other courses in statistics, mathematics, economics and environmental sciences are useful yet not necessary. All that is required will be explained in class, as well as special sessions for those who request it.

Textbook and readings: I provide my slides through D2L. Environmental and Natural Resource Economics by Tom Tietenberg and Lynne Lewis is a good source to complement your class notes. I also recommend an additional textbook for those interested in complementing the class material: Environmental Economics by Charles D. Kolstad. Additional readings will be provided in class or will be available through the University Libraries online access. These will typically be short newspaper or magazine articles illustrating applications of the theoretical material covered in class.

Other interesting readings are:


Office hours: Tuesdays and Thursdays from 11am to 12pm. My office is located in Bolton Hall 840 where I am every day. Send me an email at lazcano@uwm.edu for an appointment or drop in if my door is open. You are also welcome to approach me after class. Please use my office hours if you need help.

Lecture notes: I make my lecture notes available in D2L. Each student is responsible to take their own notes and work through the problems derived in class.

Assignments: There are five assignments. The goal of the first four assignments is to prepare you for the two exams. Out of these four assignments, the one with the lowest score
will be dropped. The last assignment involves the analysis and oral presentation of a case study. The assignments will count for 30% of your course grade. I encourage you to work cooperatively but each student needs to turn in their own work using their own words. You must upload your assignments to a Dropbox folder in D2L. There is a 20% penalty (for each 24 hours) for a late submission.

**Exams:** There are two exams. The exams are a combination of multiple choice questions, short answers and numerical problems. These are based on the lectures, in-class discussions, and the problem sets. If you are unable to write an exam due to an emergency, email me a formal request for a makeup exam with the corresponding supportive documents. The makeup exam will consist of an essay exam.

**Grading policy:** The overall course grade is based on assignments (30%), first exam (30%), second exam (30%) and class participation (10%). Class participation involves group and individual in-class problems and discussions.

**Math:** We will use some basic algebra to solve problems in lectures and problem sets. We will review math in class as needed.

**Class website:** The class has a course website in D2L where I will post lecture notes, readings, assignments and other relevant material. Any announcements will be sent through the class website, so please make sure that the email address is one that you check regularly.

**Attendance:** Class participation involves group and individual problems which count for 10% of your course grade. The material builds upon itself, so keeping up to date with the readings and lectures is important. Typically, lectures will extend results from the previous class. Missing lectures will greatly enhance the difficulty of the course. If there are concepts that you find confusing, please ask for help.

**University policies:** For information on the University’s policies for religious observances, incompletes, academic misconduct, grade appeal procedures, final examination policy, students called to military service, discriminatory conduct, and complaint procedures, please access the following link: [www.uwm.edu/Dept/SecU/SyllabusLinks.pdf](http://www.uwm.edu/Dept/SecU/SyllabusLinks.pdf).

**Participation by students with disabilities:** If you need special accommodations in order to meet any of the requirements of this course, please contact me as soon as possible.
**Academic integrity:** The university has a responsibility to promote academic honesty and integrity and to develop procedures to deal effectively with instances of academic dishonesty. Students are responsible for the honest completion and representation of their work, for the appropriate citation of sources, and for respect of others’ academic endeavors. Student academic misconduct information can be found at: [http://www4.uwm.edu/acad_aff/policy/academicmisconduct.cfm](http://www4.uwm.edu/acad_aff/policy/academicmisconduct.cfm).

**Time commitment:** This 3-credit course meets for 3 academic hours of lecture per week during the semester. Students are expected to put in 6 hours per week reading material, studying, and working on assignments to achieve the learning goals of this course. I expect you to read the relevant readings before coming to class to facilitate discussion. You will then need to revisit the material after class to fill out your class notes and ensure that you fully understand the concepts.

**Course calendar:** Subject to change; see the D2L course website for specific topics/dates as we go. In the event of disruption of normal classroom activities (e.g., due to a flu outbreak), the format for this course may be modified to enable completion of the course. In that event, you will be provided an addendum to this syllabus that will supersede this version.

**Week 1** Introduction

**Reading:** Ch 1. Environmental economics by Kolstad

**Week 2** Environmental economics and the role of the government

**Reading:** Chs 1-3. Environmental economics by Kolstad

**Week 3** Economic efficiency and cost-benefit analysis I

**Reading:** Chs 4 & 6. Environmental economics by Kolstad

**Week 4** Public goods and externalities

**Reading:** Ch 5. Environmental economics by Kolstad

**Week 5** The optimal regulation of pollution

**Reading:** Chs 11-15. Environmental economics by Kolstad

**Week 6** Climate change
Reading: Chs 11-15. Environmental economics by Kolstad

Week 7 In-class problems

Week 8 Theory for renewable natural resources I

Reading: Ch 12. Environmental and natural resource economics by Tietenberg and Lewis

Week 9 Theory for renewable natural resources II

Reading: Ch 12. Environmental and natural resource economics by Tietenberg and Lewis

Week 10 Theory for non-renewable natural resources

Reading: Ch 5 and 6. Environmental and natural resource economics by Tietenberg and Lewis

Week 11 International environmental agreements

Reading: Articles provided in class.

Week 12 Environment, growth and development

Reading: Ch 20. Environmental economics by Kolstad

Week 13 Energy: the transition from depletable to renewable resources

Reading: Ch 7. Environmental and natural resource economics by Tietenberg and Lewis

Week 14 In-class problems

Week 15 Case study and oral presentations
**Key dates:**

<table>
<thead>
<tr>
<th>Date</th>
<th>Event</th>
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<tbody>
<tr>
<td>January 22 at 9.30am</td>
<td>First day of class</td>
</tr>
<tr>
<td>February 7 at 9am</td>
<td>Assignment 1 due</td>
</tr>
<tr>
<td>February 28 at 9am</td>
<td>Assignment 2 due</td>
</tr>
<tr>
<td>March 17 &amp; 24</td>
<td>Spring break</td>
</tr>
<tr>
<td>April 4 at 9am</td>
<td>Assignment 3 due</td>
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<tr>
<td>April 25 at 9am</td>
<td>Assignment 4 due</td>
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<tr>
<td>May 9 at 9.30am</td>
<td>Assignment 5</td>
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<tr>
<td>May 9 at 9.30am</td>
<td>Last day of class</td>
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Have a wonderful semester!

Dr. Itziar Lazkano