EBGN 470: Environmental Economics  
Spring 2016  
Jared Carbone  
Division of Economics and Business, Colorado School of Mines  

Class Meetings: TR, 2:00 — 3:15p, Green Center 215  
Office Hours: TR, 3:30 — 4:30p or by appointment  
Contact Info: Email: jcarbone@mines.edu, Phone: x2175, Office: EH 311  
Course Website: [http://www.mines.edu/~jcarbone/EBGN_470_s16/](http://www.mines.edu/~jcarbone/EBGN_470_s16/)  

Instructional activity: 37.5 hours lecture, 0 hours lab, 3.0 semester hours  
Course designation: Elective  

Course description  
This is course is an upper-level elective on environmental economics. Environmental economics approaches the problem of environmental protection from the perspective of microeconomics. The key questions it attempts to answer are: What is the right level of environmental protection from society’s perspective? What design properties lead to more or less successful regulations from the perspective of achieving their environmental objectives, minimizing economic cost and balancing the gains and losses to different members of society? How can we model and measure the benefits of environmental protection?  

The field of environmental economics relies heavily on ideas from microeconomic theory. As a result, the main prerequisite for the course is completion of a course in intermediate microeconomic theory (EBGN 301).  

The field of environmental policy will receive relatively little attention. That is, we will be primarily focused on learning how to apply economic theory to the environmental problems at a conceptual level rather than discussing the details of specific policies or proposals. We may discuss specific policies but only to the extent they help illustrate key ideas.  

Textbook and/or other requirement materials:  

Other required supplemental information: Course materials distributed via the course website or as books on reserve at Arthur Lakes Library.  

Student learning outcomes: At the conclusion of the class students will...  

1. Have an understanding of the major themes covered by the fields of environmental economics.  
2. Be able to apply the tools of microeconomic theory to the analysis of environmental policy issues.  
3. Learn to write a research paper.
Brief list of topics covered:

1. Principles of welfare economics, public economics and applied microeconomic theory
2. Theory and empirics of environmental regulation
3. Environmental valuation

Policy on academic integrity/misconduct:

The Colorado School of Mines affirms the principle that all individuals associated with the Mines academic community have a responsibility for establishing, maintaining and fostering an understanding and appreciation for academic integrity. In broad terms, this implies protecting the environment of mutual trust within which scholarly exchange occurs, supporting the ability of the faculty to fairly and effectively evaluate every student’s academic achievements, and giving credence to the university’s educational mission, its scholarly objectives and the substance of the degrees it awards. The protection of academic integrity requires there to be clear and consistent standards, as well as confrontation and sanctions when individuals violate those standards. The Colorado School of Mines desires an environment free of any and all forms of academic misconduct and expects students to act with integrity at all times.

Academic misconduct is the intentional act of fraud, in which an individual seeks to claim credit for the work and efforts of another without authorization, or uses unauthorized materials or fabricated information in any academic exercise. Student Academic Misconduct arises when a student violates the principle of academic integrity. Such behavior erodes mutual trust, distorts the fair evaluation of academic achievements, violates the ethical code of behavior upon which education and scholarship rest, and undermines the credibility of the university. Because of the serious institutional and individual ramifications, student misconduct arising from violations of academic integrity is not tolerated at Mines. If a student is found to have engaged in such misconduct sanctions such as change of a grade, loss of institutional privileges, or academic suspension or dismissal may be imposed.

The complete policy is online.

Grading Procedures:

Homework assignments are marked on a numerical (percentage) basis, then converted to letter grades. The course grade is then calculated using the weights indicated above. As a guide to determining standing, the following letter grade equivalence will generally apply:

<table>
<thead>
<tr>
<th>Grade</th>
<th>Percentage</th>
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<tbody>
<tr>
<td>A+</td>
<td>97-100</td>
</tr>
<tr>
<td>A</td>
<td>93-96</td>
</tr>
<tr>
<td>A-</td>
<td>90-92</td>
</tr>
<tr>
<td>B+</td>
<td>87-89</td>
</tr>
<tr>
<td>B</td>
<td>83-86</td>
</tr>
<tr>
<td>B-</td>
<td>80-82</td>
</tr>
<tr>
<td>C+</td>
<td>77-79</td>
</tr>
<tr>
<td>C</td>
<td>73-76</td>
</tr>
<tr>
<td>C-</td>
<td>70-72</td>
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<tr>
<td>D+</td>
<td>67-69</td>
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<tr>
<td>D</td>
<td>60-66</td>
</tr>
<tr>
<td>F</td>
<td>&lt;60</td>
</tr>
</tbody>
</table>

Students must successfully complete all components of the course to successfully complete the course. At the instructor’s prerogative, remedial assignments for partial credit may be requested of students who have attempted term work without achieving passing grades. Any work that is not attempted and submitted will be assigned a grade of zero. The instructor will not accept work handed in after the assigned due date. The instructor will not schedule make-up exams or assignments. If a student must miss an assignment or exam due to an excused absence (i.e.
one that has been arranged in advance with the instructor or involves a documented illness),
additional weight will be placed on the remaining midterm exams and final project (in equal
measure) in calculating the final grade for the course.

Notes:
Students seeking reappraisal of a piece of graded term work (term paper, essay, etc.) should
discuss their work with the instructor within 15 days of the work being returned to the class.

Homework Assignments
The chapters in the Kolstad textbook listed in the course schedule (below) should be read
prior to lecture. In addition, I will periodically assign readings from other books and articles.
These reading assignments will be posted on course webpage at least a week in advance of day
they are due. I expect you to be an active participant in class discussions; your class participation
grade for the course will reflect your ability to do this. The discussion and lecture in our class
meetings will build on the readings - not replicate them. I will post my slides (for lectures in
which I make use of them) to aid you in your studies. However, you will see that the slides are
in outline form, so they are not a substitute for coming to class and taking notes of your own.

One objective of this course is to practice using the formal, mathematical tools of microe-
conomics to environmental issues. In line with this, there will be approximately four homework
assignments over the course of the semester — one for each of the major topics covered in the
course. These will be graded on a numerical basis and will count toward your final grade. You
will hand in a written copy of your answers to these questions at the beginning of the class
meeting at which they are due.

Throughout the semester, you will participate in short in-class exercises - typically in the
last 15-20 minutes of our class meetings. Your answers help me gauge what students are under-
standing and adjust the content of my lectures if needed. I will not grade your answers to the
exercises but your participation in them will count toward the class participation component of
your final grade in the course.

Final Project
A second objective of the course is to practice writing a research paper. You will identify
an environmental policy problem of your own choosing (subject to my approval), write a final
paper on the topic and present the findings of your analysis to the class in a short (∼15 min)
presentation. The final paper should be approximately 15 double-spaced pages long. It must
identify and contemporary environmental policy issue, contain a thoroughly-researched descrip-
tion of the issue and the published economic research that has attempted to analyze it. Finally,
it must relate the policy issue to the topics and tools we discuss in class over the course of the
term. A more detailed description of this assignment will be handed out during class near the
beginning of the term.

To help you develop the final paper, you will identify your topic and write a short essay on
it in the first homework assignment of the semester.
Evaluation

- Class Participation (20%)
- Homework Assignments (40% collectively)
- Final Project (40%)

Coursework Return Policy:
Graded coursework will be returned to students within two weeks of the date it is submitted for evaluation.

Absence Policy (e.g., Sports/Activities Policy):
You are required to attend lecture. Notification of planned absences must be given to the instructor in advance.

Common Exam Policy (if applicable): N/A

Course Outline and Readings
This list is preliminary. I reserve the right to modify the topics if I feel it is in the best interest of the class.

- Introduction and Intermediate Microeconomic Theory Review [Weeks 1-3]
- Social Choice [Week 4]
- Markets and Efficiency [Week 5]
- Market Failures and Property Rights [Weeks 6-7]

*No class: February 25*

- Regulating Pollution [Weeks 8-9,11]

*Spring Break: Week 10*

- Valuing the Environment [Weeks 12-14]
- Class Presentations [Weeks 15-17]