The course mainly covers research papers in empirical Environmental Economics. At the beginning of the course we will quickly review the theory of externality, which provides the theoretical foundation of many of the empirical questions in Environmental Economics. For this part, you might find it useful to consult an advanced Microeconomics textbook, or a Public Economics textbook such as:

The research papers that we will study use designed-based empirical methods to answer causal questions. Some (although not all) of these empirical methods are very effectively summarized in the following book:

**Book(s) on Reserve:** None

**Desire2Learn:** This course will make use of the Desire2Learn (D2L) platform. Students who are registered in the course can log on at [http://d2l.ucalgary.ca](http://d2l.ucalgary.ca) through their student centre. Please note that D2L features a class e-mail list that may be used to distribute course-related information. These e-mails go to your University of Calgary e-mail addresses only.

**Course Outline:**
This course studies modern environmental problems as a result of market failures, and analyses empirically the existing evidence about government responses to these problems. A substantial part of the course will be focused on empirical studies of the functioning of environmental policies. By surveying the environmental economics literature, we will learn and apply standard techniques for designed-based empirical analysis. For most of the course, we will spend an entire lecture analysing one paper, so as to gather a thorough understanding of the empirical tools used in the paper, as well as the environmental problem and solutions there discussed and proposed. This is a list of topics that will be covered (notice that this lists borrows heavily from: Michael Greenstone 14.475 *Environmental Economics and Government Responses to Market Failure, Spring 2005.* (Massachusetts Institute of

- Externalities, Pigovian Taxes, and the Coasian Solution
- Defining Welfare Changes and Cost-Benefit Analysis
- Valuation of Nonmarket Goods with a Focus on Environmental Goods: Hedonic Method, Theory and Applications
- Valuation of Nonmarket Goods with a Focus on Environmental Goods: The Health Effects Approach, Applications
- Environmental Policy Instruments: Permits and Trading
- Environmental Policy Instruments: Inspections and Fines
- Environmental Policy Instruments: Voluntary Regulation
- The Political Economy of Environmental Policy

Grade Determination and Final Examination Details
There are four course requirements. First, there will be a midterm exam, to be scheduled in the first weeks after the beginning of the course. Second, there will be a number of home assignments, which can take the form of either referee reports (i.e. short writing exercises based on papers on the syllabus, to be handed in the day the paper is discussed in class), or replications of papers discussed in class. Third, there will be a class presentation. Finally, there is a 5 page paper proposal. There will not be a final exam.

- You can choose one of two grading schemes:
  i) Participation, 15%; Homework (2 assignments), 50%. Midterm exam, 20%. Class Presentation 15%.
  ii) Participation, 15%; Homework (1 assignment) 20%. Midterm exam, 20%. Class Presentation 15%. Paper proposal 30%.
- Students may work on homework assignments and class presentation in pairs. The presentation will be about a paper that you choose from the list below.
- The second scheme is intended for PhD students (particularly those wishing to write one chapter of their dissertation on issues related to the Environmental Economics), the first for MA’s or other PhD students. The goal is that everyone read papers closely and, by the end of the term, has read enough to be able to formulate an original research project.

Tests and final exams are marked on a numerical (percentage) basis, then converted to letter grades. The course grade is then calculated using the weights indicated above. The following letter grade equivalences will apply:

<table>
<thead>
<tr>
<th>Letter Grade</th>
<th>Range</th>
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<tbody>
<tr>
<td>A+</td>
<td>95 – 100</td>
</tr>
<tr>
<td>A</td>
<td>85 – 94</td>
</tr>
<tr>
<td>A-</td>
<td>80 – 84</td>
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<tr>
<td>B+</td>
<td>77 – 79</td>
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<tr>
<td>B</td>
<td>73 – 76</td>
</tr>
<tr>
<td>B-</td>
<td>70 – 72</td>
</tr>
<tr>
<td>C+</td>
<td>67 – 69</td>
</tr>
<tr>
<td>C</td>
<td>63 – 66</td>
</tr>
<tr>
<td>C-</td>
<td>60 – 62</td>
</tr>
<tr>
<td>D+</td>
<td>56 – 59</td>
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<tr>
<td>D</td>
<td>50 – 55</td>
</tr>
<tr>
<td>F</td>
<td>0 – 49</td>
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</table>

A passing grade on any particular component of the course is not required for a student to pass the course as a whole.
Notes:

- All students must comply with the regulations published in the University Calendar concerning “Intellectual Honesty,” “Examinations,” etc.

- Students seeking reappraisal of a piece of graded term work (term paper, essay, etc.) should discuss their work with the Instructor within fifteen days of the work being returned to the class.

- It is the student's responsibility to request academic accommodations. If you are a student with a documented disability who may require academic accommodation and have not registered with the Disability Resource Centre, please contact their office at 403-220-8237. Students who have not registered with the Disability Resource Centre are not eligible for formal academic accommodation. You are also required to discuss your needs with your instructor no later than fourteen (14) days after the start of this course.

- Students who are unable to write one assignment or the research proposal because of an illness, family emergency or religious observance can benefit of an extension of the deadline up to a maximum of five days. In any event, the assignment must be submitted before we discuss the solutions in class. Failure to do so will result in failure to pass the course. Documentation MUST be provided.

Faculty of Arts Program Advising and Student Information Resources

- Have a question, but not sure where to start? The Arts Students’ Centre is your information resource for everything in Arts! Drop in at SS102, call them at 403-220-3580 or email them at artsads@ucalgary.ca. You can also visit the Faculty of Arts website at http://arts.ucalgary.ca/undergraduate which has detailed information on common academic concerns, including program planning and advice.

- For registration (add/drop/swap), paying fees and assistance with your Student Centre, contact Enrolment Services at 403-210-ROCK [7625] or visit them in the MacKimmie Library Block.

- Online writing resources are available at http://www.ucalgary.ca/ssc/resources/writing-support

Safewalk/Campus Security: 403 220 5333
Emergency Assembly Point: Professional Faculties Food Court

PC/mi
2015-07-03
Detailed outline

Here follows a list of relevant papers for this course.

The papers labelled as “class material” will be discussed in class. The lecture will cover the general topic that the paper deals with, and the empirical methodology used. You will write a referee report for at least one of the papers discussed in class, at your choice. The referee report is to be submitted on D2L by midnight of the day before we discuss the paper in class. Please double-check with me if you are not sure when a paper is going to be discussed in class.

The papers labelled as “for students’ presentation” can be chosen for your class presentation. You can work on the class presentation in pairs. The paper that you have chosen for your presentation is to be submitted by email to me by October 31th. You will also indicate a second choice. If more than one group has selected the same paper, the paper will be assigned on a “first-come-first-served” basis.

When a paper is a Working Paper or mimeo, please double-check online before reading it, as its status and version might have changed since the time I wrote this list (normally the most updated version of an unpublished paper is found on the author(s) website.)

Topic I. Valuation of Environmental Goods: Hedonic Method, Application to Housing Market


Topic II. Valuation of Environmental Goods: The Health Effects Approach

Deschenes, Olivier and Greenstone, Michael and Shapiro, Joseph S. (2017). Defensive Investments and the Demand for Air Quality: Evidence from the NOx Budget Program and Ozone Reductions. *American Economic Review*, Forthcoming (for students’ presentation)


**Topic III. Valuation of Environmental Goods: The Household Production Function Approach**


**Topic IV. Environmental Policy Instruments: Prices vs. Quantities, Permits and Trading**


**Topic V. Environmental Policy Instruments: Inspections and Fines, Voluntary Regulations, Regulation through Revelation**


**Topic VI. Costs of Environmental Regulations, Double Dividend Hypothesis**


**Topic VI. Policy application: climate change**


**Topic VII. The Political Economy of Environmental Policy**


**Topic VIII. Topics at the Intersection of Environmental and Development Economics**


Burgess, Robin and Deschenes, Olivier and Donaldson, Dave. 2015. Weather and Death in India. Mechanism and Implications for Climate Change. *Mimeo University of Chicago* (for students’ presentation)