

**ECONOMICS 581**  
**Advanced Environmental Economics**  
Syllabus

**Class meetings:** TR 8:00-9:15, 274 Heady Hall

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**Office Hours:** TBA

**Class Homepage:** <http://www.econ.iastate.edu/classes/econ581/Herriges/>

**Course Objectives:** In this course, we will examine the application of economic principles to problems of pollution control and the valuation of environmental improvements. In part 1, we begin with an introduction to the theory of externalities, property rights, and corrective measures, and then turn to issues in the design of environmental policy. In this section, we will examine the use of Pigouvian taxes, marketable permits, regulatory standards and subsidies as potential pollution control tools, both in terms of their theoretical properties and practical potential as policy instruments. Additionally, empirical studies examining many of these questions will be considered.

In part 2, we will study methods economists have employed to value improvements to the environment. This section will start with the theory of welfare measurement and will be followed by a discussion of methods used to value non-market resources. The methods we will examine include both revealed and stated preference methods such as recreation demand models, averting behavior, hedonic studies, and contingent valuation studies.

**Text:** (Recommended, but not required)

- Baumol, W., and W. Oates, *The Theory of Environmental Policy*, Second edition, Cambridge University Press, Cambridge, 1988.
- Freeman, A. M. (1993) *The Measurement of Environmental and Resource Values: Theory and Methods*, Resources for the Future.
- Haab, T., and T.E. McConnell (2002), *Valuing Environmental and Natural Resources: The Econometrics of Non-market Valuation*, Edward Elgar Publishers.

Additional readings are available on reserve in the main library and online via the class reading list.

**Grading:** The course grade is based on

1. Midterm exam (30%)
2. Final exam (30%)
3. Paper (30%)
4. Class participation (10%)

## **Guidelines for Paper:**

You have two options to fulfill the term paper requirement: a research paper or a critique paper. Both should be less than 20 pages.

The papers should be in different topic areas (meaning that your paper should be sufficiently different from those of your classmates). Thus starting early helps you *claim* your specific topic. You need to hand in a 1-page proposal to officially claim your topic.

The papers themselves are due on the day that the final course exam is scheduled.

### *Research Paper Guidelines:*

The paper should represent new contributions to the literature. It can be analytical or empirical. The structure is pretty standard: you need to identify the topic, discuss why it is interesting, review the literature, describe your model and data set (if applicable), and draw conclusions from your results.

### *Critique Paper Guidelines:*

1. Choose papers (from the reading list or elsewhere, but must include some that are not discussed in the lectures) in a relatively narrow area. For example, marketable permits is too broad, but market structure problems in marketable permits or valuing environmental quality with season limits are appropriate.
2. Identify a few of the most important articles on the topic. Summarize these papers clearly, pretending that you are lecturing your fellow students. To do so you may want to present some of the formal models in the paper.
3. Present a critique of these papers. For example, you may want to ask the following questions: What important assumptions are being made? Are they realistic? What important problems are being ignored? Are the results relevant for policy purposes? Is the analysis complete? What gaps exist in the literature that need to be filled?
4. Fix the problem or at least discuss how one might fix it, i.e., discuss how the model might be changed, what alternative methods could be used, what type of data would work better to empirically assess the problem, etc. If your critique is on an unrealistic assumption, you need to find (or predict) the *new* results (i.e. different from the original results) based on the new realistic assumptions. If you claim that the analysis is not complete, then complete it (or discuss how to complete it). For example, it is not enough to simply declare that certain papers are not realistic because they are based on the assumption that the regulator knows the firms' abatement costs. In this case, you should discuss the likely changes in the model and the results when the regulator does not know the costs.