Objectives and Requirements
Res Ec 720 is a graduate course in environmental and natural resource economics. This term the course is focused largely, but not exclusively on environmental economics and policy. We intend to provide the foundational knowledge for advanced study of this field. All students are expected to have taken graduate courses in microeconomic theory and statistics.

The course is split into two. Professor Stranlund will cover dynamic optimization with environmental and natural resource applications and the theory of environmental regulation in the first part. Evaluations in the first part will be based on a series of homework assignments and a midterm exam. Professor Mullins will cover empirical applications in the second part. Evaluations in this part will be based on submitted summaries of assigned articles, a literature review, and in-class presentations of one of the covered papers. In addition to your performance on the exam and assignments, your grade will be determined by your participation in class. At a minimum we expect each of you to attend every class prepared to discuss the assigned readings.

Texts
There are no required texts for this course, but two that you may want to purchase for your library are:


In addition, we recommend that you familiarize yourselves with an undergraduate text like Tom Tietenberg's and Lynne Lewis’s *Environmental and Natural Resource Economics* (10th edition, 2014). This text provides intuitive and graphical expositions of topics that we will explore more rigorously. A more advanced undergraduate/beginning graduate text is Charles Kolstad’s *Environmental Economics* (2nd edition, 2010). At the other end of the difficulty spectrum are Barry Field’s texts, *Environmental Economics* and *Natural Resource Economics*. These texts are used in our introductory undergraduate classes in this field.

You should familiarize yourself with the *Review of Environmental Economics and Policy*. This journal publishes accessible reviews of various topics in environmental economics, so it is a good source for gaining a broad understanding of research in this field.
Course Outline and Reading List (Subject to Change)
Readings marked with a (*) in the list below will be stressed and should be read prior to class. The reading list is also meant to serve as a partial bibliography should you wish to delve deeper into a particular topic. If you wish to go even further, please feel free to ask us about additional readings.

ResEc 720: First Module
Professor Stranlund

1. Dynamic Optimization

Hanley, Shogren and White, Sections 7.1 - 7.3.

2. The Economic Theory of Environmental Regulation

Fundamentals of Designing Environmental Policies
Hanley, Shogren and White, Chapters 3, 4, and 5.

Market Imperfections

Regulation under Abatement-Cost Uncertainty
Non-Point Source Pollution

Enforcement

ResEc 720: Second Module
Professor Mullins

3. Valuation and Impact Measurement - Approaches

Stated Values – Contingent Valuation

Revealed Values-Basics

The “Gold Standard”: Randomized Controlled Trials

Causal Inference using Quasi-Experimental Data
[Focus on first half]
4. Empirical Applications in Environmental Economics

Valuation: Economic Goods (and Bads)

Exposure & Health

Policy Evaluation

Climate Change

Academic Honesty
If we find that you have cheated on a writing assignment or an exam, we will pursue the matter to the fullest extent possible under the procedures outlined in the UMass-Amherst Academic Honesty Policy and Procedures [http://www.umass.edu/honesty/](http://www.umass.edu/honesty/).