Course content:
We will use economics to learn why we harm the environment and overuse natural resources, and what we can do about it. We will talk about whether and how we can put a dollar value on nature and ecosystem services. We will study cost benefit analysis, pollution in general, climate change, natural resources (like fisheries, forests, and fossil fuels), and energy. We will take an economic approach to global sustainability, and study the relationship between the environment and economic growth and trade.

Prerequisite: ECON1210.

Course Objectives:
Some people think economics is “all about the bottom line,” where the bottom line is necessarily about corporate profits and GDP. It’s certainly possible to use economics in that way. However, the tools of economics are also well-suited to helping solve the world’s environmental and natural resource problems. In this class, we will take a tour of the fields of environmental and natural resource economics. The objective of the course is to give you a taste of what the topics in these fields are, and how economic tools are useful in analyzing and solving problems in these fields. By the end of the semester, you will be able to approach a range of environmental and resource problems with the perspective of an economist, and I hope this will inform your engagement with the world’s important environmental policy debates.

Learning outcomes:
Knowledge
You should know
- The concepts and frameworks that characterize an efficient allocation of resources.
- The different types of institutions that can contribute to achieving efficiency with respect to private goods, public goods, and common pool resources
- The main types of policy tools that governments can use to correct market failures related to the environment

Skills
You should be able to
- Propose policy instruments to correct for market failures related to the environment
- Assess the advantages and disadvantages of such policy instruments
- Use cost benefit analysis to assess a wide range of policy options or investments decisions.

Competence
You should
- Increase your ability to comprehend environmental and natural resource problems, and critically assess environmental policy proposals
Textbook / Materials:
Hanley, Shogren, and White *Introduction to Environmental Economics*, second edition (2013), Oxford University Press. First edition is fine, too. Note that the same authors have a more advanced text; be careful to get the right book or you may find yourself confused!

The course reading packet contains supplementary required readings.

Tuition activity:
Group oral presentation: Groups will choose a research topic related to the course, which has to be approved by the instructor by the third week of class. Groups that have not chosen a topic by then will be assigned one by the instructor. Groups will be randomly formed on Canvas. Please check Canvas to see your group assignment. During the last week of class, every group will give a 15min presentation. Another group will be responsible for leading a 15min discussion. Guidelines for the assignment will be given at the beginning of the course.

Course Schedule / Outline: (tentative; subject to changes)

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<th>Topic</th>
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<td>Dissanayake &amp; Jacobson, Jayachandran et al., Larson</td>
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<td>Lecture 9</td>
<td>Growth, development, and sustainability</td>
<td>HSW chap.6, Summers etc., Daly / Dasgupta, UNU-IHDP &amp; UNEP, Robinson</td>
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<td>HSW chap.13, Planet Money</td>
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<td>Seminar 9</td>
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</tbody>
</table>
Reading list: (tentative; subject to changes)

Introduction, background


Climate change I

  EPA 430-R-16-004. [www.epa.gov/climate-indicators](http://www.epa.gov/climate-indicators).
- Watts, Jonathan, 2018, We have 12 years to limit climate change catastrophe, warns UN. *The Guardian*, London, UK.

Pollution

- Waldman, Scott, 2016, High levels of PFOA found in dumps in Hoosick Falls, Petersburgh. *Politico*.

Policies


Cost benefit analysis and valuation

• Stated preference examples from Johnston et al. 2012 and Chang et al. 2011
  of a red drum stock enhancement program in South Carolina. *Journal of Benefit-Cost
  Analysis*, 9(2), 323-341.

Risk and harm
• Cropper, Maureen. 2009. “Measuring the Costs of Air Pollution and Health in China.”
  *Resources*, 173, 19-21.
• EPA. 2011. “Regulatory Impact Analysis for the Final Mercury and Air Toxics
  Standards,” Executive Summary.

Land Conservation and Ecosystem Services
• Dissanayake, Sahan. 2018. “Global Deforestation and REDD+”
• Dissanayake, Sahan, and Jacobson, Sarah. 2018. “PES Game Instructions.”
• Jayachandran, Seema, De Laat, Joost, Lambin, Eric F., Stanton, Charlotte Y., Audy,
• Larson, Debra L., 2013, Trading wetlands no longer a 'deal with the devil'. *ScienceDaily*.

Growth, development, and sustainability
• Summers, Lawrence. Excerpt from World Bank memo 1991, plus *New York Times*
  articles
• Daly, Herman, 2005, "Economics In A Full World." Scientific American, pp. 100-107.
  (with Dasgupta 1-page response included)
  toward sustainability. Cambridge: Cambridge University Press.
  the Future.

Nonrenewable resources
  NPR.

Energy

Climate change II
• Aldy, Joseph E., Krupnick, Alan J., Newell, Richard G., Parry, Ian W. H. and Pizer,
  Literature*, 48(4), 903-934.
• Samuelson, R.J., 2019, Why I'm (slightly) less pessimistic about global warming. The Washington Post, Washington, DC.

Fisheries
• https://grantmcdermott.shinyapps.io/open-access-fishery/