Economics for Natural Resources and the Environment (ENST 387)

Location: WPH 207
12:30-1:50 pm Tuesday, Thursday
Fall 2017, 4 units

Course overview: This class will introduce students to the basic precepts of environmental and resource economics, with an eye toward the increasing influence of resource economics policy responses to environmental problems. The theoretical basis is then applied to such aspects as traditional and “green” energy, the energy-water nexus, air quality, and environmental management, with an emphasis on resource sustainability and conservation. This course offers a policy-oriented approach and introduces economic theory in the context of debates and empirical work from the field. Students complete the course with a global perspective of both environmental and natural resource economics.

This course is built both on lectures and on student discussion and debate. Students are expected to study the required text assignment before lectures. Students will be also asked to prepare short presentations on major issues discussed in the course.

Readings:

2. Other readings will be posted on the Blackboard on the weekly basis.

Course goals:
1. Be able to use critically the many sources of information about environmental economic policies to solve empirical problems.
2. Be able to use theoretical perspectives to identify and explain domestic and global environmental problems and the linkages among them.
3. Demonstrate the habit of accessing sources of environmental knowledge and the skill to critically interpret, assess and apply evidence.

Learning objectives:
- an interdisciplinary approach to complex environmental problems using basic tools of economics and international processes;
- the ability to work effectively as a member of an interdisciplinary team on complex problems involving multiple competing stakeholders and agendas;
- the ability to critically evaluate the economic and policy ramifications of diverse energy portfolios on air and water quality, climate, weapons proliferation and societal stability;
- an experience-based understanding of economic policies in California including water and energy needs, air quality, marine and coastal issues;
- the ability to write effectively about complex environmental problems and do so for both specialist and general audiences with equal facility; and
- the ability to apply quantitative reasoning skills to environmental problems including basic calculations related to sustainability issues and the use of quantitative methods in data analysis and argumentation.

Please refer to https://dornsife.usc.edu/environmental-studies/learning-objectives/ for more information.
Research paper:
The writing assignment of the course is an original research paper of **minimum 15 pages** (including bibliography, double-spaced, 1-inch margins). This will be on a topic of the student’s choice, refined in collaboration with the instructors and reflecting the student’s research interests. Please use; double-spaced. Required number of sources: **15 per paper**. The instructors will provide additional guidelines on the required diversity of sources. When you submit the paper, please give a hard copy to the instructor AND upload the paper on the Blackboard in “Assignments.”

**Grading**
Midterm Exam 1 20%
Midterm Exam 2 20%
Final Exam 30%
Research Paper 15%
Quizzes/Homework/Presentations in class 15%

**Academic Conduct**
Plagiarism – presenting someone else’s ideas as your own, either verbatim or recast in your own words – is a serious academic offense with serious consequences. Please familiarize yourself with the discussion of plagiarism in SCampus in Section 11, *Behavior Violating University Standards* [https://scampus.usc.edu/1100-behavior-violating-university-standards-and-appropriate-sanctions/](https://scampus.usc.edu/1100-behavior-violating-university-standards-and-appropriate-sanctions/). Other forms of academic dishonesty are equally unacceptable. See additional information in SCampus and university policies on scientific misconduct, [http://policy.usc.edu/scientific-misconduct/](http://policy.usc.edu/scientific-misconduct/).

Discrimination, sexual assault, and harassment are not tolerated by the university. You are encouraged to report any incidents to the Office of Equity and Diversity [http://equity.usc.edu/](http://equity.usc.edu/) or to the Department of Public Safety [http://capsnet.usc.edu/department/department-public-safety/online-forms/contact-us](http://capsnet.usc.edu/department/department-public-safety/online-forms/contact-us). This is important for the safety whole USC community. Another member of the university community – such as a friend, classmate, advisor, or faculty member – can help initiate the report, or can initiate the report on behalf of another person. The Center for Women and Men [http://www.usc.edu/student-affairs/cwm/](http://www.usc.edu/student-affairs/cwm/) provides 24/7 confidential support, and the sexual assault resource center webpage sarc@usc.edu describes reporting options and other resources.

**Support Systems**
A number of USC’s schools provide support for students who need help with scholarly writing. Check with your advisor or program staff to find out more. Students whose primary language is not English should check with the American Language Institute [http://dornsife.usc.edu/ali](http://dornsife.usc.edu/ali), which sponsors courses and workshops specifically for international graduate students. The Office of Disability Services and Programs [http://sait.usc.edu/academicsupport/centerprograms/dsp/home_index.html](http://sait.usc.edu/academicsupport/centerprograms/dsp/home_index.html) provides certification for students with disabilities and helps arrange the relevant accommodations. If an officially declared emergency makes travel to campus infeasible, USC Emergency Information [http://emergency.usc.edu/](http://emergency.usc.edu/) will provide safety and other updates, including ways in which instruction will be continued by means of blackboard, teleconferencing, and other technology.

**Grading and Correction of Grades**
Excerpts for this section have been taken from the University Grading Handbook, located at [http://www.usc.edu/dept/ARR/grades/gradinghandbook/index.html](http://www.usc.edu/dept/ARR/grades/gradinghandbook/index.html). Please see the link for more details on this and any other grading concerns.

A grade of Missing Grade (MG) “should only be assigned in unique or unusual situations... for those cases in which a student does not complete work for the course before the semester ends. All missing
grades must be resolved by the instructor through the Correction of Grade Process. One calendar year is allowed to resolve a MG. If an MG is not resolved [within] one year the grade is changed to [Unofficial Withdrawal] UW and will be calculated into the grade point average a zero grade points.

A grade of Incomplete (IN) “is assigned when work is not completed because of documented illness or other ‘emergency’ occurring after the twelfth week of the semester (or 12th week equivalency for any course scheduled for less than 15 weeks).”

Course Schedule:

Week 1: August 22, 24
Introduction. Course Objectives and Structure.
T&L, Ch. 1. Visions of the Future

Week 2: August 29, 31
The Economic Approach: Property Rights, Externalities, and Environmental Problems
T&L, Ch. 2

Week 3: September 5, 7
Evaluating Trade-Offs: Benefit-Cost Analysis and Other Decision-Making Metrics
T&L, Ch. 3


Week 4: September 12, 14
Valuing the Environment: Methods
T&L, Ch. 4
Case-Study: California High-Speed Rail Authority. “California High-Speed Rail Benefit-Cost Analysis (BCA)” Prepared by Parsons and Brinckerhoff. April 2012

Week 5: September 19, 21

Dynamic Efficiency and Sustainable Development.

T&L, Ch. 5, 8


Week 6: September 26, 28

Midterm Exam 1 – Thu, September 28

Overpopulation


Week 7: October 3, 5

Depletable Resource Allocation: The Role of Longer Time Horizons, Substitutes, and Extraction Cost. Energy: The Transition from Depletable to Renewable Resources

T&L, Ch. 6 and 7


Week 8: October 10, 12

Water: A Confluence of Renewable and Depletable Resources.

T&L, Ch. 9


Week 9: October 17, 19
A Locationally Fixed, Multipurpose Resource: Land

T&L, Ch. 10


**Week 10: October 24, 26**

Storable, Renewable Resources: Forests. Common-Pool Resources: Commercially Valuable Fisheries

T&L, Ch. 11 and 12


**Week 11: October 31, November 2**

MIDTERM II – November 2, Thursday

Recyclable Resources: Minerals, Paper, Bottles, and E-Waste

T&L, Ch. 8


**Week 12: November 7, 9**

Economics of Pollution Control: An Overview. Stationary-Source Local and Regional Air Pollution

T&L, Ch. 14 and 15


**Week 13: November 14, 16**

Mobile-Source Air Pollution. Water Pollution

T&L, Ch. 17 and 18


**Week 14: November 21**
Research Paper is Due

   T&L, Ch. 13 and 19


Week 15: November 28, 30

Climate Change. The Quest for Sustainable Development. Visions of the Future Revisited

   T&L, Ch. 16, 20, and 21


FINAL EXAM: Tuesday, December 12 from 11 a.m.-1 p.m. (the usual location of our lectures – WPH 207)