

Instructor:

Dr. Kate Svyatets

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Office Hours: Mon, Wed, Fri from 12 p.m. to 1 p.m. and by appointment

Economics for Natural Resources and the Environment (ENST 387)

Location: WPH 207

10:00-10:50am MWF

Spring 2018, 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:

1. Textbook: Tietenberg & Lewis (T&L). *Environmental & Natural Resource Economics*, 10th edition. ISBN: 9780133479690. Other editions of the textbook are OK to use.

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	25%
Final Exam	35%
Research Paper	20%
Quizzes/Homework/Presentations	20%

Grading Scale

Course final grades will be determined using the following scale

A	93-100
A-	90-92
B+	87-89
B	83-86
B-	80-82
C+	77-79
C	73-76
C-	70-72
D+	67-69
D	63-66
D-	60-62
F	59 and below

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>. 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: January 8, 10, 12

Introduction. Course Objectives and Structure.

T&L, Ch. 1. Visions of the Future

"Los Angeles River Reconstruction," *The Los Angeles Times*, 2016

Eve Bachrach, "Huge LA River Restoration Report Recommends \$453MM Plan," *Curbed Los Angeles*, September 13th, 2013

Week 2: January 17, 19

Martin Luther King's Birthday Jan. 15: NO CLASS

The Economic Approach: Property Rights, Externalities, and Environmental Problems

T&L, Ch. 2

Trieu Mai, Ryan Wisler, *et al.* "A Prospective Analysis of the Costs, Benefits, and Impacts of U.S. Renewable Portfolio Standards." A report by the National Renewable Energy Laboratory and the Lawrence Berkeley National Laboratory, December 2016.

Week 3: January 22, 24, 26

Evaluating Trade-Offs: Benefit-Cost Analysis and Other Decision-Making Metrics

T&L, Ch. 3

Hutton, G., & Menne, B. (2014). Economic evidence on the health impacts of climate change in Europe. *Environmental Health Insights*, 8, 43-52.

Brandt, S., Perez, L., Künzli, N., Lurmann, F., Wilson, J., Pastor, M., & McConnell, R. (2014). Cost of near-roadway and regional air pollution-attributable childhood asthma in Los Angeles County. *Journal of Allergy and Clinical Immunology*, 134(5), 1028-35.

Week 4: Jan, 29, 31, Feb. 2

Valuing the Environment: Methods: I

T&L, Ch. 4

Commonwealth of Australia. "The Benefits of Marine Protected Areas." Report. 2003

Case-Study: California High-Speed Rail Authority. "California High-Speed Rail Benefit-Cost Analysis (BCA)" Prepared by Parsons and Brinckerhoff. April 2012

Week 5: Feb. 5, 7, 9

Valuing the Environment: Methods: II

T&L, Ch. 5, 8

Case-Study: Industrial Economics, Inc. "Final Report: Assessing the Economic Benefits of Reductions in Marine Debris: A Pilot Study of Beach Recreation in Orange County, California." Prepared for Marine Debris Division, National Oceanic and Atmospheric Administration, June 15, 2014.

Ai, N., PhD., & Leigh, Nancey Green, PhD., F.A.I.C.P. (2017). "Planning for Sustainable Material and Waste Management." Planning Advisory Service Report, (587), 1-98.

Week 6: Feb. 12, 14, 16

Overpopulation

Warner, K., Hamza, M., Oliver-smith, A., Renaud, F., & Julca, A. (2010). Climate change, environmental degradation and migration. *Natural Hazards*, 55(3), 689-715.

Week 7: Feb. 21 and Feb. 23

President's Day Mon Feb. 19: NO CLASS

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

Parish, E. S., Kline, K. L., Dale, V. H., Efrogmson, R. A., McBride, A. C., Johnson, T. L., Bielicki, J. M. (2013). Comparing scales of environmental effects from gasoline and ethanol production. *Environmental Management*, 51(2), 307-38.

Week 8: Feb. 26, 28, March 2

MIDTERM EXAM – February 28, Wednesday

Water: A Confluence of Renewable and Depletable Resources.

T&L, Ch. 9

Kevin DeGood, "Clean Water Infrastructure: The Cost of Inaction," Center for American Progress, October 30, 2013

Famiglietti, J. S. (2014). The global groundwater crisis. *Nature Climate Change*, 4(11), 945-948.

Week 9: March 5, 7, 9

A Locationally Fixed, Multipurpose Resource: Land

T&L, Ch. 10

Burge, G. S., & Ihlanfeldt, K. R. (2013). Promoting sustainable land development patterns through impact fee programs. *Cityscape*, 15(1), 83-105.

Week 10: March 12, 14, 16 -- Spring Break – NO CLASS

Week 11: March 19, 21, 23

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

T&L, Ch. 11 and 12

Pitcher, Tony and William W.L. Cheun. "Fisheries: Hope or despair?" *Marine Pollution Bulletin* 74 (2013) 506–516

Week 12: March 26, 28, 30

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

T&L, Ch. 8

Warner, B. M. (2010). Sacking the culture of convenience: Regulating plastic shopping bags to prevent further environmental harm. *The University of Memphis Law Review*, 40(3), 645-680.

Week 13: April 2, 4, 6

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

T&L, Ch. 14 and 15

Ma, Q., Cai, S., Wang, S., Zhao, B., Martin, R. V., Brauer, M., . . . Burnett, R. T. (2017). Impacts of coal burning on ambient pollution in China. *Atmospheric Chemistry and Physics*, 17(7), 4477-4491.

Week 14: April 9, 11, 13

Mobile-Source Air Pollution. Water Pollution

T&L, Ch. 17 and 18

Drevno, A. (2016). Policy tools for agricultural nonpoint source water pollution control in the U.S. and E.U. *Management of Environmental Quality*, 27(2), 106-123.

Grahame, T. J., & Schlesinger, R. B. (2010). Cardiovascular health and particulate vehicular emissions: A critical evaluation of the evidence. *Air Quality, Atmosphere, & Health*, 3(1), 3-27.

Week 15: April 16, 18, 20

Research Paper is on April 16

Ecosystem Goods and Services: Nature's Threatened Bounty. Toxic Substances and Environmental Justice

T&L, Ch. 13 and 19

Bateman, I. J., Mace, G. M., Fezzi, C., Atkinson, G., & Turner, K. (2011). Economic analysis for ecosystem service assessments. *Environmental and Resource Economics*, 48(2), 177-218.

Week 16: April 23, 25, 27

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

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

“Transforming our world: the 2030 Agenda for Sustainable Development.” Resolution adopted by the General Assembly. United Nations. 25 September 2015

FINAL EXAM: Monday, May 7 from 8-10 a.m. (the usual location of our lectures – WPH 207)

Support Systems

Student Counseling Services (SCS) - (213) 740-7711 – 24/7 on call

Free and confidential mental health treatment for students, including short-term psychotherapy, group counseling, stress fitness workshops, and crisis intervention.

<https://engemannshc.usc.edu/counseling/>

National Suicide Prevention Lifeline - 1-800-273-8255

Provides free and confidential emotional support to people in suicidal crisis or emotional distress 24 hours a day, 7 days a week. <http://www.suicidepreventionlifeline.org>

Relationship & Sexual Violence Prevention Services (RSVP) - (213) 740-4900 - 24/7 on call

Free and confidential therapy services, workshops, and training for situations related to gender-based harm. <https://engemannshc.usc.edu/rsvp/>

Sexual Assault Resource Center

For more information about how to get help or help a survivor, rights, reporting options, and additional resources, visit the website: <http://sarc.usc.edu/>

Office of Equity and Diversity (OED)/Title IX compliance – (213) 740-5086

Works with faculty, staff, visitors, applicants, and students around issues of protected class.

<https://equity.usc.edu/>

Bias Assessment Response and Support

Incidents of bias, hate crimes and microaggressions need to be reported allowing for appropriate investigation and response. <https://studentaffairs.usc.edu/bias-assessment-response-support/>

Student Support & Advocacy – (213) 821-4710

Assists students and families in resolving complex issues adversely affecting their success as a student EX: personal, financial, and academic. <https://studentaffairs.usc.edu/ssa/>

Diversity at USC – <https://diversity.usc.edu/>

Tabs for Events, Programs and Training, Task Force (including representatives for each school), Chronology, Participate, Resources for Students

USC Department of Public Safety – UPC: (213) 740-4321 24-hour emergency or to report a crime.

Provides overall safety to USC community. dps.usc.edu

Academic Conduct

USC seeks to maintain an optimal learning environment. Students are expected to submit original work. They have an obligation both to protect their own work from misuse and to avoid using another's work as their own. All students are expected to understand and abide by the principles of academic honesty outlined in the University Student Conduct Code (see University Governance, Section 11.00) of SCampus (www.usc.edu/scampus or <http://scampus.usc.edu>). The recommended sanctions for academic integrity violations can be found in Appendix A of the Student Conduct Code.

Emergency preparedness/course continuity

If an officially declared emergency makes travel to campus infeasible, USC Emergency Information <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.

Students with Disabilities

USC is committed to making reasonable accommodations to assist individuals with disabilities in reaching their academic potential. If you have a disability which may impact your performance, attendance, or grades in this course and require accommodations, you must first register with the Office of Disability Services and Programs (www.usc.edu/disability). DSP provides certification for students with disabilities and helps arrange the relevant accommodations. Any student requesting academic accommodations based on a disability is required to register with Disability Services and Programs (DSP) each semester. A letter of verification for approved accommodations can be obtained from DSP. Please be sure the letter is delivered to me as early in the semester as possible. DSP is located in GFS (Grace Ford Salvatori Hall) 120 and is open 8:30 a.m.–5:00 p.m., Monday through Friday. The phone number for DSP is (213) 740-0776. Email: ability@usc.edu