

Request for Graduate Course Addition

- 1. Prepare one paper copy with all signatures and supporting material and forward to the Graduate Council Chair.
- 2. E-mail one identical PDF copy to the Graduate Council Chair. If attachments included, please merge into a single file.
- 3. **The Graduate Council cannot process this application until it has received both the PDF copy and the signed hard copy.**

College: CITE Dept/Division: ES AS&T Alpha Designator/Number: ES522 Graded CR/NC

Contact Person: Scott Simonton Phone: 746-2045

NEW COURSE DATA:

New Course Title: Environmental Sustainability

Alpha Designator/Number: E S 5 2 2

Title Abbreviation: S u s t a i n a b i l i t y
(Limit of 25 characters and spaces)

Course Catalog Description: The course will introduce students to the ideas behind, the debates within, and the work that goes into sustainability, including a review of things we value, how nature works, and intelligent policy decisions.
(Limit of 30 words)

Co-requisite(s): na First Term to be Offered: Sp 2016

Prerequisite(s): na Credit Hours: 3

Course(s) being deleted in place of this addition (must submit course deletion form): na

Signatures: if disapproved at any level, do not sign. Return to previous signer with recommendation attached.

Dept. Chair/Division Head _____	Date _____
Registrar _____	Date _____
College Curriculum Chair _____	Date _____
Graduate Council Chair _____	Date _____

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College: CITE

Department/Division: ES AS&T

Alpha Designator/Number: ES522

Provide complete information regarding the new course addition for each topic listed below. Before routing this form, a complete syllabus also must be attached addressing the items listed on the first page of this form.

1. FACULTY: Identify by name the faculty in your department/division who may teach this course.

Dr. Scott Simonton

2. DUPLICATION: If a question of possible duplication occurs, attach a copy of the correspondence sent to the appropriate department(s) describing the proposal. Enter "**Not Applicable**" if not applicable.

Not Applicable

3. REQUIRED COURSE: If this course will be required by another department(s), identify it/them by name. Enter "**Not Applicable**" if not applicable.

Not Applicable

4. AGREEMENTS: If there are any agreements required to provide clinical experiences, attach the details and the signed agreement. Enter "**Not Applicable**" if not applicable.

Not Applicable

5. ADDITIONAL RESOURCE REQUIREMENTS: If your department requires additional faculty, equipment, or specialized materials to teach this course, attach an estimate of the time and money required to secure these items. (Note: Approval of this form does not imply approval for additional resources.) Enter "**Not Applicable**" if not applicable.

Not Applicable

6. COURSE OBJECTIVES: (May be submitted as a separate document)

Attached

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7. COURSE OUTLINE (May be submitted as a separate document)

Attached

8. SAMPLE TEXT(S) WITH AUTHOR(S) AND PUBLICATION DATES (May be submitted as a separate document)

Attached

9. EXAMPLE OF INSTRUCTIONAL METHODS (Lecture, lab, internship)

Lecture, discussion, case study evaluation, group projects

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10. EXAMPLE EVALUATION METHODS (CHAPTER, MIDTERM, FINAL, PROJECTS, ETC.)

Discussion questions, Projects, Mid-term and Final exams

11. ADDITIONAL GRADUATE REQUIREMENTS IF LISTED AS AN UNDERGRADUATE/GRADUATE COURSE

Greater detail required in data evaluation, project development and discussion questions, additional section in exams

12. PROVIDE COMPLETE BIBLIOGRAPHY (May be submitted as a separate document)

Attached

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Please insert in the text box below your course summary information for the Graduate Council agenda. Please enter the information exactly in this way (including headings):

Department:
Course Number and Title:
Catalog Description:
Prerequisites:
First Term Offered:
Credit Hours:

Department: CITE AS&T Environmental Science
Course Number and Title: ES522 Environmental Sustainability
Catalog Description: The course will introduce students to the ideas behind, the debates within, and the work that goes into sustainability, including a review of the things we value, how nature works, and intelligent policy decisions.
Prerequisites: None
First Term Offered: Spring 2016
Credit Hours: 3

Course Objectives

This course begins with the premise that moving toward sustainability involves mastering at least three sorts of skills and knowledge, and exercising them conjointly. First, moving toward sustainability requires making difficult decisions between things that we value, when these values often pull in different directions. It might also require transforming the way we, and others, value our world. Moving toward sustainability means being able to talk intelligently about those values and how they are formed and transformed, and being able to balance different values held by different groups, so as to promote and sustain intelligent debate when values conflict. Second, moving toward sustainability means knowing how nature works and how the decisions we make to achieve what we value will affect and change the natural world in which we live and on which we rely. Third, moving toward sustainability means making intelligent policy decisions out of the knowledge of what is possible now in our society, even if we want to try to stretch the limits of what is possible. That requires knowing how economic and political systems work, and how far they can stretch before they break. It also involves knowing what technology (both present and projected) can and cannot do. The course goals involve one or another of these three tasks and how they relate, and we apply these concepts to sustainability and the interfaces between environmental, economic and social responsibilities.

Outcomes

Students should:

1. be able to identify and describe the principal elements of a scientific understanding of an ecosystem in relation to a challenge to sustainability.
2. be able to identify different stakeholders in a challenge to sustainability, and analyze the political and economic structures that connect them.
3. be able to describe sources from U.S. history of current approaches to challenges to sustainability and assess their continuing utility.
4. be able to analyze debates over challenges to sustainability in terms of different value systems, differing appropriations of scientific findings and different background commitments in economics and politics, and then assess different positions in those debates according to the adequacy of all three.
5. be able to propose a viable solution to a particular challenge to sustainability and create a persuasive proposal that advocates this solution.
6. have developed a greater capacity to contribute to sustainability drawing on their own area of expertise in conversation with others and their areas of expertise.
7. have developed a greater appreciation both of the complex challenges we face in moving toward a more sustainable world but also of the possibility of crafting creative and effective responses to those challenges.

Sustainability Course Outline

		Readings	Assignments
Week 1	Class expectations, intros, discussion about sustainability		
Week 2	Definitions, nature and values	Leopold	Discussion Question #1
Week 3	The land ethic, history of environmentalism	Leopold	Discussion Question #2
Week 4	The land ethic, history of environmentalism, cont.	Leopold	Discussion Question #3
Week 5	Population trends and demand on resources	Tragedy of the Commons	Discussion Question #4
Week 6	Energy needs, future projections	EIA data, assigned current reading	
Week 7	Sustainable energy		Mid-term handed out
Week 8	Food needs, feeding the world, modern agriculture	New Food Revolution, National Geographic May 2014, other current articles	Mid-term due
Week 9	Sustainable agriculture		Discussion Question #5

Week 10	Micro-level demand on resources including housing, transportation, waste management	Current data and relevant and current articles	Discussion Question #6
Week 11	Sustainable housing		Discussion Question #7
Week 12	Corporate sustainability efforts; Policies and institutions	Nike, Walmart, Patagonia Sustainability reports, other current articles	
Week 13	Sustainability efforts		Class Presentations
Week 14	Sustainability efforts		Class Presentations
Week 15 Dead week	Wrap up, case studies of where we are today, what can we personally do		Final exam distributed

Sample Text:

Leopold, A. 1949. A Sand County Almanac. Oxford University Press, Oxford, UK.

Bibliography

Abend, L. 2010. How cows (grass-fed only) could save the planet.

Boulding, K. E. 1966. The economics of coming spaceship Earth. Page 3-14 in Environmental Quality for a Growing Economy. Resources for the Future, Johns Hopkins University Press.

Coleman, J. 2005. Animal last stands: empathy and extinction in the American West. Montana, The Magazine of Western History 55: 2-13.

Crozier, L. G., A. P. Hendry, P. W. Lawson, T. P. Quinn, N. J. Mantua, J. Battin, R. G. Shaw, and R. B. Huey. 2008. Potential responses to climate change in organisms with complex life histories: evolution and plasticity in Pacific salmon. Evolutionary Applications 1: 252-270.

Economist. 2012. June 22

Hardin, G. 1968. The tragedy of the commons. Science 162: 1243-1248. 11

Kolstø, S. D. 2001. Scientific literacy for citizenship: tools for dealing with the scientific dimension of controversial socioscientific issues. Science Education 85: 291-310.

Leopold, A. 1949. A Sand County Almanac. Oxford University Press, Oxford, UK.

Locke, R. M., R. Henderson, C. Lyddy, and C. Reavis. 2009. Nike considered: getting traction on sustainability. MIT Sloan Management 08-077.
<https://mitsloan.mit.edu/MSTIR/sustainability/NikeConsidered/Documents/08.077.Nike%20Considered.Getting%20Traction%20on%20Sustainability.Locke.Henderson.pdf>.

Marris, E., P. Kareiva, J. Macaro, and E. C. Ellis. 2011. Hope in the age of man. New York Times, December 7, <http://www.nytimes.com/2011/12/08/opinion/the-age-of-man-is-not-adisaster.html>.

Mote, P. W., and E. P. Salathé. 2010. Future climate in the Pacific Northwest. Climatic Change 102: 29-50.

Murphy, P. 2005. Sustainable Marketing. Business & Professional Ethics Journal VOL: X-X.

Oreskes, N. 2004. The scientific consensus on climate change. Science 306 1686.

Patagonia. 2001. Don't buy this jacket. New York Times. November 25,
http://patagonia.typepad.com/files/nyt_11-25-11.pdf.

Pollan, M. 2006. Omnivores Dilemma: A Natural History of Four Meals. Penguin Press, New York, NY.

- Pretty, J. 2008. Agricultural sustainability: concepts, principles and evidence. *Philosophical Transactions of the Royal Society of London Series B* 262: 447- 465.
- Ratner, S. 2011. The great corn con. *New York Times*, June 25.
- Scharlemann, J. P. W., and W. F. Laurance. 2008. How green are biofuels? *Science* 319: 43-44.
- Shulman, S., J. Deyette, B. Ekurzel, D. Friedman, M. Mellon, J. Rogers, S. Shaw. 2012. *Cooler smarter: practical steps for low-carbon living*. Island Press, Washington DC.
- Smith, P., D. Martino, Z. Cai, D. Gwary, H. Janzen, et al. 2007. Agriculture. In *Climate Change 2007: Mitigation. Contribution of Working Group III to the Fourth Assessment Report of the Intergovernmental Panel on Climate Change*. Cambridge University Press, Cambridge, UK, <http://www.ipcc.ch/pdf/assessment-report/ar4/wg3/ar4-wg3-chapter8.pdf>
- Speth, J. G. 2008. *The Bridge at the End of the World*. Yale University Press, New Haven, CT.
- Stein, J. 2012. It's not easy being green: why Gen Y can't be bothered to save the planet. *Time Magazine*, April 2.
- Strohm, S. 2011. When business is good. *New York Times*, February 22. 12
- Tilman, D., K. G. Cassman, P. A. Matson, and S. Polasky. 2002. Agricultural sustainability and intensive production practices. *Nature* 418: 671-677.
- United Nations. 2011. *State of the World Population: People and Possibilities in a world of 7 billion*. Available online at: <http://foweb.unfpa.org/SWP2011/reports/EN-SWOP2011-FINAL.pdf>
- Wald, M. 2011. U.S. Backs project to produce fuel from corn waste. *New York Times*, July 7.
- Welch, D. and A. Aston. 2006. "Fill 'er up—but at what price?" *BusinessWeek*, May 22. White, L. W. 1967. *The historical roots of our ecologic crisis*. *Science* 155: 1203- 1207. White, R. 1996. *The Organic Machine*. Hill and Wang, New York, NY.