

# California State Polytechnic University, Pomona

## John T. Lyle Center for Regenerative Studies

RS 599/599L: Methods and Applications in Regenerative Systems  
Winter Quarter, 2008  
4 Credits

Tuesdays and Thursdays, 2:00 – 5:00 pm  
John T. Lyle Center for Regenerative Studies, Seminar Room (209-217)

### Instructors

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Center Web Page: <http://www.csupomona.edu/~crs/>

### Course Description

Climate change is one of the most complex issues that the world is facing in this century. Overwhelming research suggests that concentrations of anthropogenic greenhouse gases in the atmosphere have already reached unprecedented levels, causing changes in global temperature and observable impacts throughout the world and these changes are happening more quickly than expected. In response to this crisis, President Ortiz has signed the Presidents Climate Commitment, a voluntary pledge to neutralize greenhouse gas emissions on campus over time. In 2007, this course was instrumental in informing this decision by the President and in guiding the preliminary work of the President's Climate Task Force.

The focus of this year's course will be to examine the implications of regenerative responses to climate change for Cal Poly Pomona University. Building on inventory work conducted by last year's class, this course emphasizes more detailed modeling of emissions characteristics and alternative scenarios for reduction and mitigation. Students will develop proposals for physical interventions, policy programs and/or community development strategies that address one or more aspect of climate change. The course will explore the administrative and political dimensions of effectuating change, enhancing students' effectiveness in developing initiatives that will be implemented.

This course serves as the required methods course for MSRS students, and is also open to interested graduate students in other programs, or undergraduate students eligible for 500-level courses. Co-current enrollment in both the Lab and Lecture component is required.

### Objectives

1. To develop the ability to identify environmental problems and generate solutions.
2. To refine methods for analyzing environmental conditions and systems relationships introduced in previous coursework.
3. To develop methods of applying regenerative principles and conceptualizing systems for resolving environmental problems.
4. To develop methods for evaluating the efficacy and consequences of proposed solutions with regard to their impact on natural processes and human communities.
5. To develop methods of evaluating policy choices and increasing effectiveness as a change agent in political and institutional settings.

## Meeting Time and Location

Class is scheduled in the seminar room at the Lyle Center for two, three-hour sessions each week and involves seminar discussion; lecture material and in-class work on student projects. Students are welcome to bring food and beverages to class to keep them content during the three-hour period.

## Required Text

Required readings for the course will consist of online material, a course reader that is available for purchase in the ENV print room in Building 7, and the following text:

Rappaport, Ann and Sarah Hammond Creighton. 2007. Degrees that Matter: *Climate Change and the University*. Cambridge: MIT Press.

This text was a late addition to the course and will not be available in the University Bookstore in a timely fashion. It can be acquired from online retailers for about \$18.

## Requirements

The course includes a greenhouse gas projection analysis for Cal Poly Pomona University, readings and discussions related to climate change, strategic responses, and policy analysis. There will be an exam near the end of the quarter to assess learning from readings and discussions. The largest portion of your course grade will be based on an analysis of greenhouse gas reduction and/or mitigation strategies.

Attendance and participation in all class sessions is expected. Excused absences will only be granted under the following conditions: 1) the student notifies one of the instructors by email or phone prior to the beginning of class (messages delivered by classmates are unacceptable); *and* 2) The absence is due to illness, family emergency or other important, unavoidable conflict that is approved by the instructor prior to the class. The student may, at the instructors' discretion, be given an extra assignment to make up for the excused absence.

## Evaluation

Course grade will be based on the following:

Greenhouse Gas Projection Assignment – 15%  
Course Exam – 20%  
Participation and Attendance – 15%  
Case Study – 50%

## Plagiarism and Academic Dishonesty

Plagiarism and other forms of academic dishonesty are not acceptable, and are grounds for dismissal from this course and possibly the University. Related to this course, particular emphasis is placed on intentionally or knowingly presenting words, ideas or work of others as one's own work. This means that documentation of sources of images, data, findings, etc. related to your course project is essential. Please see the University Manual for policies regarding plagiarism.

## RS 599/599L Course Calendar – Winter 2008

*Note: Schedule is tentative and may be subject to change*

<b>Tuesdays</b>	<b>Thursdays</b>	<b>Readings*</b>
January 8 <ul style="list-style-type: none"> <li>• Course Overview</li> <li>• Discussion of the Physical Science Basis (IPCC)</li> </ul>	10 <ul style="list-style-type: none"> <li>• Climate Change Discussion (EPA &amp; DOE)</li> <li>• Introduction to GHG Projections Analysis Assignment</li> </ul>	Intergovernmental Panel on Climate Change (IPCC) (2007). Working Group I Report "The Physical Science Basis"—Summary for Policy Makers.  US Environmental Protection Agency (2007) Inventory Of U.S. Greenhouse Gas Emissions And Sinks: 1990-2005 USEPA #430-R-07-002. Executive Summary. (online)  US Department of Energy, (2007) Emissions of Greenhouse Gases in the United States 2006. Executive Summary. (online)
15 <ul style="list-style-type: none"> <li>• Climate Change and Campuses (Rappaport &amp; Creighton)</li> <li>• Discussion of CPP inventory (Rusina et al.)</li> </ul>	17 <ul style="list-style-type: none"> <li>• Discussion of GHG Projections</li> <li>• Introduction to case-study project and formation of teams</li> </ul>	Rusina, et al. (2007) California State Polytechnic University, Pomona Greenhouse Gas Emissions Inventory Report, 1995-2005. (online)  Rappaport & Creighton, Chapters 1 and 3
22 <b>GHG Projections Analysis Due</b> <ul style="list-style-type: none"> <li>• Policy Analysis Discussion (Patton &amp; Sawicki)</li> </ul>	24 <ul style="list-style-type: none"> <li>• Strategies and Tactics for Climate Action (Rappaport &amp; Creighton)</li> <li>• Modeling (Lyle)</li> </ul>	Patton, C. and D. Sawicki (1993) <i>Basic Methods of Policy Analysis and Planning</i> . Engelwood Cliffs, N.J.: Prentice Hall. pp. 46-69, excerpts from Chapter 2, The Policy Analysis Process. (reading packet)  Lyle, J.T. (1991) "The Utility of Semi-Formal Models in Ecological Planning" <i>Landscape and Urban Planning</i> . 21: 47-60 .(reading packet)  Rappaport & Creighton, Chapter 5
29 <ul style="list-style-type: none"> <li>• Stabilization Wedges (Pacala &amp; Socolow)</li> <li>• Renewable Energy Production and Purchases (US. DOE)</li> </ul>	31 <ul style="list-style-type: none"> <li>• Energy behavior and use in buildings (Staats et al, McMakin et al, and Rappaport &amp; Creighton)</li> </ul>	Pacala, S. & R. Socolow. (2004) Stabilization Wedges: Solving the Climate Problem for the Next 50 Years with Current Technologies." <i>Science</i> . 305:5686, pp. 968-972. (reading packet).  U.S. Department of Energy, et al. (2004). <i>Guide to Purchasing Green Power</i> (online)  Staats, Henk et al. (2000) "A longitudinal Study of Informational Interventions to Save Energy in an Office Building." <i>Journal of Applied Behavior Analysis</i> 33:101-104 (reading packet)  McMakin, Andrea, et al. (2002) "Motivating Residents to Conserve Energy without Financial Incentives." <i>Environment and Behavior</i> 34:848 (reading packet)  Rappaport & Creighton, Chapters 6 and 7
February 5 <ul style="list-style-type: none"> <li>• <b>In-Progress Presentation</b></li> </ul>	7 <ul style="list-style-type: none"> <li>• Land Use and Transportation (Norman et al, and Willson)</li> </ul>	Willson (1997) "Parking Pricing Without Tears: Trip Reduction Programs." <i>Transportation Quarterly</i> . 51: 79-90.  Norman, J. et al. (2006) "Comparing High and Low Residential Density: Life Cycle Analysis of Energy Use and Greenhouse Gas Emissions." <i>Journal of Urban Planning and Development</i> . 132: 10-21. (reading packet)
12 <ul style="list-style-type: none"> <li>• Offsets (Clean Air-Cool Planet)</li> <li>• Sequestration (Gorte)</li> </ul>	14 <ul style="list-style-type: none"> <li>• Combining a systems level view with incremental action (Willson et al.)</li> </ul>	Clean Air-Cool Planet. 2006. <i>A Consumer's Guide to Retail Carbon Offset Providers</i> . (online)  Gorte, Ross (2007) <i>Carbon Sequestration in Forests</i> . CRS Report for Congress.  Willson, Payne and Smith, "Does Discussion Enhance Rationality? Communicative Rationality in Transportation Planning." (2003) <i>Journal of the American Planning Association</i> . 69: 354 – 367 (reading packet)

## RS 599/599L Course Calendar – Winter 2008 (continued)

*Note: Schedule is tentative and may be subject to change*

19 • <b>In-Progress Presentation</b>	21 • Gathering support for proposals	Willson (2006) "The Dynamics of Organizational Culture and Academic Planning." <i>Planning for Higher Education</i> . April – June 2006, pp. 5-17. (reading packet)  Rappaport and Creighton, Chapter 4
26 • Work Session	28 <b>Exam</b>	
March 4 • Work Session	6 <b>Dry-Run – Final Presentation</b>	
11	13 <b>Final Project Presentation - Guest Reviewers</b>	
18	20 <b>Final Report Due</b>	

\* Students are expected to complete the readings prior to their listed class session, and prepare for their discussion on the listed date.