Instructor: Robert Wilkinson, Ph.D.  phone: 569-2590
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Class Time: Tuesday 7:00 pm - 9:50 pm
Class Location: Chem 1179
Office: Bren 4011
Office Hours: 2:00 - 3:00 pm, Tuesdays and Thursdays and by appointment.

Required Readings:
Reader: ES116, Building Sustainable Communities, Grafikart, 6550 Pardall Rd, Isla Vista

Recommended Readings (in reader):
- UN Habitat and World Bank Docs

Course Description:
The subject of this course is the nexus between communities and sustainability. We begin with an examination of the topic: What is sustainability in the context of urban systems, and how should these systems be studied in light of sustainability concerns?

We will consider the impacts urban systems have on the environmental systems that support them, and we will study the ways we account for costs, benefits, and the environment in our activities relating to urban systems. We will also look at how decisions are made. Who decides how cities and the related “hinterland” (now global in scope) is used, and what processes are involved? We will consider changes which could improve both urban systems and regional and global support systems, and we will explore some of the policy tools available and how they can be employed to accomplish this goal of achieving sustainable communities. Finally, and importantly, we will look at the role of the university in building sustainable communities.

This is an interdisciplinary course. Class members will conduct field studies to build an understanding of the concepts and principles discussed in class.

Grading Program

<table>
<thead>
<tr>
<th>Component</th>
<th>Points</th>
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<tr>
<td>Quizzes (8 pop quizzes worth 25 points each)</td>
<td>200</td>
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<tr>
<td>Midterm Exam #1</td>
<td>200</td>
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<td>Midterm Exam #2</td>
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<td>Public Meeting</td>
<td>50</td>
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<td>Site Visit – Metabolism</td>
<td>50</td>
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<tr>
<td>Paper # 1</td>
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<tr>
<td>Paper # 2</td>
<td>100</td>
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<td>Paper # 3</td>
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<td>Total Points</td>
<td>1000</td>
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<tr>
<td>Extra Credit: Speaking / Testimony at public hearing</td>
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NOTE:

Please note that the quizzes will count for significant points (200). There will be NO MAKE-UPS on quizzes. You snooze, you lose. Be prepared for each class and you should do well. Your grade will also be based on the written assignments, participation in class assignments, and two mid-term tests.

This course requires students to do more than read about the world from an “ivory tower”. You will be required to attend a public meeting dealing with urban issues, and visit components of the urban “metabolism” (such as a land-fill site, a wastewater treatment plant, water supply system, etc.). We will discuss which meetings and sites qualify. You are encouraged to visit these sites and attend meetings in small groups in order to share the experiences. Options for these assignments are available within easy walking or bicycle distance, or by bus, so you do not need a car. If you drive, plan to car-pool. You will need to PLAN AHEAD for these meetings and site visits. DON’T wait until the last minute.

I will give extra credit to those who are organized enough – and brave enough – to get up and speak at the public hearings. It’s not as tough as it may sound, and it is great training. We will discuss this option further. Give it serious consideration.

I expect full participation in this class. Virtual attendance won’t cut it. If you don’t plan to attend class every week, please don’t sign up.

If you attend class regularly, do the reading, and complete the assignments, you should do well.

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<td>October 5</td>
<td><em>The Sustainability Challenge in a Global Context:</em> Understanding Links to Larger Systems</td>
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<td>October 12</td>
<td><em>Cities as Systems:</em> The Metabolism of Urban Centers</td>
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<td>October 19</td>
<td><em>Indicators of Sustainability,</em> Accounting for “Progress”</td>
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<td>November 2</td>
<td><em>A Systems Perspective:</em> Urban Sustainability in an Environmental Context</td>
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<td>November 9</td>
<td><em>Green Building and Design for Sustainability</em></td>
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<td>November 16</td>
<td><em>Equity, Justice, and Social Factors</em></td>
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<td>November 23</td>
<td><em>Moving Toward Sustainability Through Policy:</em> Changing Institutions and the Planning Process</td>
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**Summary Course Calendar**

Start reading right away. There is a significant reading load, and you will need to have read the material ON THE DAY IT IS LISTED.
**September 28  Tuesday**

_Sustainability is not something to be defined but something to be declared. It is an ethical guiding principle._

_Bert De Vries_

**Topic:  Introduction and Overview: The Sustainability Idea and the Urban Environment**

We will begin by exploring and defining terms and concepts related to the themes of this class: sustainability, communities, and cities as systems within larger systems. We will examine the following questions: What is the urban environment? What is sustainability in the context of urban systems, and how should urban systems be studied in light of sustainability concerns? What is the role of design in promoting a sustainable world? Can ecological design provide a new way of thinking about the urban environment?

**Film:  Green Plans**

**October 5  Tuesday**

_Great cities are biological parasites in their use of the vital resources, air, water and food, in urban metabolism. The bigger the cities, the more these systems demand from the surrounding countryside and the greater danger of damaging the natural environment “host”._

_Ian Douglas, The Urban Environment_

**Topic:  The Sustainability Challenge in a Global Context: Understanding Links to Larger Systems**

How can we create local sustainable communities in a global economy? First we need to understand the global context in which cities function. We will examine the systems within which urban systems function. Global warming and climate change will be explored in detail as an example of a global system affecting cities.

**Lester Brown, 2009.  Plan B 4.0: Mobilizing to Save Civilization**

- Preface and Chapters 1, 2, & 3

**Reader:**

- Origins of the Sustainability Concept

**Film:  Ecological Design: Inventing the Future**

**October 12  Tuesday**

_A technological society has two choices. First, it can wait until catastrophic failures expose system deficiencies, distortions, and self-deceptions ... Second, a culture can provide social checks and balances to correct for system distortions prior to catastrophic failures._

_Mahatma Gandhi_

**Topic:  Cities as Systems: The Metabolism of Urban Centers**

We will continue the exploration of urban systems using the notion of metabolism as a way to conceptualize the way cities function. How do urban centers function as systems? What do they consume and what do they expel? How do they do it? What are the impacts?

**Reader:**

- Lewis Mumford, 1938. “Cities and the Crisis of Civilization”
- UCSB Sustainability and The Natural Step: read the summary and then look at the report on line at: http://sustainability.ucsb.edu/plan/
- UN Millennium Goals, Economist 9/2005

**Lester Brown, 2009.  Plan B 4.0: Mobilizing to Save Civilization**

- Chapters 4 & 5

**Film:  Metabolism of London**
October 19  

We fear things in proportion to our ignorance of them.  
Livy, Roman Historian

**Topic:**  Indicators of Sustainability, Accounting for “Progress”

How do we account for costs and benefits, goods and bads, in our activities?  How do we measure progress?  What feedback changes could improve both urban centers and the regional and global support systems?  What policy tools are available, and how could they be employed?  How does a community measure its efforts toward sustainability?

**Reader:**
- Daly, Herman. 1973. “The Steady-State Economy”, in *Toward a Steady-State Economy*

**PAPER #1 DUE TODAY**

October 26  

Review of material covered to date in the class.

**MIDTERM #1**

November 2  

When we try to pick out anything by itself, we find it hitched to everything else in the universe.  
John Muir

**Topic:**  A Systems Perspective: Sustainability in an Environmental Context

From a systems perspective, what is the structure of the urban system?  What feedback loops reinforce the present patterns, and why do urban systems do what they do?  Where are the leverage points, and how do we access them?

**Reader:**

**Films:**  Audubon
The care of the Earth is our most ancient and most worthy, and, after all, our most pleasing responsibility. To cherish what remains of it, and to foster its renewal, is our only legitimate hope.

Wendell Berry, *The Unsettling of America*

**Topic:** Green Building and Design for Sustainability

This week we will explore the topics of “green building” and design. Is there a better way to design and create the products of our built environment? We will discuss energy use and building design, urban planning, and materials use.

**Reader:**
- Hubbard, Alice and Clay Fong, *Community Energy Workbook*, 1997, Rocky Mountain Institute, 1730 Snowmass Creek Road, Snowmass, CO 81654-9199.
- Kinsley, Michael and L. Hunter Lovins, *Paying for Growth, Prospering from Development*, RMI.

**Lester Brown, 2009. Plan B 4.0: Mobilizing to Save Civilization**
- Chapters 6 & 9

**Film:** Sustainable Architecture

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**November 16 Tuesday**

*We cannot solve the problems we have created with the same thinking that created them.*

Albert Einstein

*We need to come together and choose a new direction. We need to transform our society into one in which people live in true harmony--harmony among nations, harmony among the races of humankind, and harmony with nature . . . We will either reduce, reuse, recycle, and restore--or we will perish.*

Rev. Jesse Jackson

**Topic:** Equity, Justice, and Social Factors

What impact do these patterns have on the larger systems supporting urban centers, local, regional, and global? What are the human factors involved in the patterns of urban settlements? Are they always present, or are there options? What other systems do they impact? How can we make environmental justice a reality?

**Reader:**

**Lester Brown, 2009. Plan B 4.0: Mobilizing to Save Civilization**
- Chapter 7

**Film:** *Ecoracism (PBS)*

*Kids for the Bay*
When you’ve been climbing a mountain for a long time and the summit seems to be as far away as ever, it can give you new heart for the ascent to look back and see how far you’ve come.

Harold Gilliam, Earth Day, 1990

**Topic:** Moving Toward Sustainability Through Policy: Changing Institutions and the Planning Process

Various policy options exist to encourage actions consistent with sustainability goals and to discourage those which are not. How do communities plan for sustainability from global to local levels? What are some new concepts and processes for promoting sustainable community planning? How is the U.S. addressing the need for sustainable community planning? Can federal, state, and local governments cooperate to achieve sustainable development?

**Reader:**
- “Beyond Sprawl: New Patterns of Growth To Fit The New California.”
- Smart Growth Guide

**Lester Brown, 2009. Plan B 4.0: Mobilizing to Save Civilization**
- Chapters 8 &10

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**PAPER #3 DUE TODAY**

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**November 30 Tuesday**

Course review.

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**MIDTERM #2**