

SUSTAINABLE URBAN DEVELOPMENT

CITY AND REGIONAL PLANNING 6233

Professor Anne Steinemann
anne.steinemann@arch.gatech.edu

Spring Semester 2002
Monday 6 p.m.-9 p.m.

OBJECTIVES

In this course, we will explore the principles and practice of sustainable development, within the context of planning. The course includes lectures, readings, case studies, selected guest speakers, and a final project.

Your final project will be a major product of this course. This is an exciting and unique opportunity to make an urban community more sustainable. In this case, your community is Georgia Tech. Your role will be similar to that of a professional planning consultant:

You will work with “clients” and develop projects to make Georgia Tech a more sustainable campus. In addition, you will give oral and written presentations to campus administrators and others. Notably, as a result of previous years' projects, the central principle of the campus master plan became “sustainability.”

This course will be run similar to a studio, using “problem-based learning”: Students will learn through the process of identifying problems and working independently to solve them. This requires that students take initiative and become active participants. Here, you will design a suitable project, establish contacts, seek out resources, perform analyses, grapple with barriers, and take steps to implement your project. Remember that it is not enough to come up with a good idea and expect other people to implement it. In previous years, students have found that campus decision makers respond favorably to projects that demonstrate cost savings and other measurable benefits to Georgia Tech.

An additional product of this course will be your “lessons learned” on how to implement sustainability. Throughout the semester, you will write up and discuss what you have learned and are still learning. Even though each of you will work on different aspects of campus sustainability, the class periods will be an opportunity to share projects, discuss barriers and successes, bring in helpful resources, and improve the implementation process.

COURSE MATERIALS

I am happy to report that you can obtain most of the course materials without cost. The required readings are on web reserve. Our required book, "The Ecology of Commerce" by Paul Hawken, can be purchased at most bookstores. In addition, I have placed useful references on reserve at the Architecture Library.

GRADING

Your grade will be based on your final course project (50%), quizzes and class assignments (25%), and participation in class (25%). The value of this course depends

on everyone's informed and active participation. Please let me know if an emergency will cause you to miss a class. If you must miss a class, you should arrange to get class notes and handouts from another student.

OFFICE HOURS

To be arranged on the first day of class.

Sustainable Urban Development: Course Schedule

(subject to changes)

Week	Topics
1 Jan 7	Introduction to course <u>Read</u> The Ecology of Commerce
2 Jan 14	Foundations of sustainable development <u>Discussion</u> on The Ecology of Commerce <u>Read</u> Hardin and Georgescu-Roegen articles <u>Submit</u> web page assignment
3 Jan 21	Martin Luther King Holiday (no class)
4 Jan 28	Economics, ethics, and ecology of sustainable development <u>Discussion</u> on Hardin and Georgescu-Roegen articles <u>Read</u> Briassoulis, Campbell, and Beatley articles
5 Feb 4	Planning, planners, and sustainability plans <u>Discussion</u> on Briassoulis, Campbell, and Beatley articles <u>Read</u> Southworth and Berke articles
6 Feb 11	Urban design and sustainability <u>Discussion</u> on Southworth and Berke articles <u>Read</u> Maclaren and Alberti articles
7 Feb 18	Sustainability indicators <u>Discussion</u> on Maclaren and Alberti articles
8 Feb 25	Implementing sustainability
9 March 4	Spring Recess (no class)
10 March 11	Campus sustainability
11 March 18	Environmental issues
12 March 25	Sustainable construction; Green buildings
13 April 1	The Natural Step

14 April 8	Future directions in sustainable development
15 April 15	Case studies
16 April 22	Class presentations Final Project Report due; Lessons Learned Report due

Readings, Assignments, and Resources

Required course book:

The Ecology of Commerce by Paul Hawken, Harper Business, 1993.

Required readings (on Web reserves): <http://www.library.gatech.edu>

Alberti, M. 2000. Urban Patterns and Environmental Performance: What do we know? *Journal of Planning Education and Research*. 19(2):151-163.

Beatley, T. 1995. Planning and Sustainability: The Elements of a New (Improved?) Paradigm. *Journal of Planning Literature* 9(4): 383-395.

Berke, P. R., & Conroy, M. M. 2000. Are We Planning for Sustainable Development? An Evaluation of 30 Comprehensive Plans. *Journal of the American Planning Association* 66(1):21-33.

Briassoulis, H. 1999. Who Plans Whose Sustainability? Alternate Roles for Planners. *Journal of Environmental Planning and Management* 42(6):889-903.

Campbell, S. 1996. Green Cities, Growing Cities, Just Cities? Urban Planning and the Contradictions of Sustainable Development. *Journal of the American Planning Association* 62(3):296-312.

Georgescu-Roegen, N. 1971. The Entropy Law and the Economic Problem. Reprinted from the University of Alabama Distinguished Lecture Series, no. 1.

Hardin, G. 1968. The Tragedy of the Commons. Reprinted from *Science* vol. 162.

Maclaren, V.W. 1996. Urban Sustainability Reporting. *Journal of the American Planning Association* 62(2): 184-202.

Southworth, M. 1997. Walkable Suburbs: An Evaluation of Neotraditional Communities at the Urban Edge. *Journal of the American Planning Association* 63(1):28-44.

Course Web Page on Sustainability: <http://murmur.arch.gatech.edu/~steinema/sustain.htm>

This course web page provides links to hundreds of other useful web sites. Your assignment, for the first week of class, is to try out these web resources. Then, type a one-page summary of what you found to be most useful. Also provide suggestions for additions and improvement. Submit this summary at the beginning of class on January 14.

Reading Discussions, Class Assignments, and Pop Quizzes

Referring to the course schedule: Read means that those readings are assigned for the coming week. Discussion means that we will discuss those readings during that class period.

Before the discussion days: Think of a good question that pertains to the readings, and try to answer your own question. The quality of your question counts as much as your answer. Then, type up your question/answer on one or two pages, single or double spaced. At the beginning of class (on the discussion day), hand in your question/answer to me.

Pop quizzes will be administered at the beginning of some classes. The quizzes can be based on the readings to be discussed that day, as well as previously assigned readings. So be sure to keep up with the assignments.

Sustainable Urban Development -- Course Project

Making Georgia Tech a More Sustainable Campus

As the saying goes, sustainability starts in your own back yard — think globally, act locally. In this course, you will have an opportunity to do just that. Your project will help Georgia Tech become a more sustainable campus.

First, identify a problem and possible solutions. Ask yourself: What is not sustainable at Georgia Tech, and why is it a problem (and a cost)? How could Georgia Tech become more sustainable, and how would Georgia Tech benefit? I encourage you to look at previous course projects, and especially projects from other universities.

Then, design your sustainability project, work with campus officials, talk with experts in the area, collect data, perform analyses, investigate similar projects, identify the necessary resources, people, and actions -- and strive to implement your sustainability project.

In this process, you will encounter barriers. An important part of the learning process, and a pedagogical goal of this course, is to learn how to identify and overcome barriers, and to adapt when faced with uncertainty and changing conditions.

Products:

1. A professional quality report on your sustainability project (see guidelines). Your report should be approximately ten double-spaced pages in length, not including tables, figures, and references. In your report, be sure to emphasize your key findings, and your unique work. For the project, you can work either on your own or with one other student. (If you work in a pair, just turn in one final report for both of you.) You will make oral presentations of your work -- both informal presentations throughout the course, and a formal presentation on the last day of class. The final report is due on the last day of class, April 22.

2. A report on “lessons learned” for implementing sustainability (see guidelines). This report should be approximately six double-spaced pages in length, not including appendices. I would like each of you, individually, even if you are in a pair, to document what you are learning as you proceed with your projects. To do this, keep a “journal” of your experiences. Think about the questions in the report guidelines, and address them in your journal. At randomly selected times in the class, you will be asked to talk about your learning process and your project, so this journal will provide useful notes for you. As a final report, summarize your journal and include additional thoughts and material. This report is also due on the last day of class, April 22.

Again, be prepared to discuss both your projects and your learning process during any class period.

Note: Your final project report will be distributed externally. Your lessons learned report will remain internal and confidential.

General Format for Sustainability Project Reports

Please prepare your report to cover each of these six main sections. You do not need to address each and every question directly, but rather use them as a basis for developing your reports. Feel free to discuss additional topics within each section.

Executive Summary

1-2 pages. Highlight main findings, benefits, results, and recommendations.

Project Definition and Motivation

What is not sustainable at Georgia Tech?

Why is this a problem?

Why would Georgia Tech benefit from being more sustainable in this area?

What are other campuses doing? What can we learn from them?

Perform initial sustainability assessment.

Determine purpose and scope of project, and its relationship with other projects at Georgia Tech.

Sustainability Plan Development

How could Georgia Tech be made more sustainable in this area?

Develop "visions" and discuss alternatives.

Investigate and highlight results from other campuses (if relevant).

Obtain baseline information. Discuss data sources.

Develop, analyze, and prioritize alternatives.

Discuss feasibility, advantages and disadvantages, benefits and costs.

Narrow down alternatives to one strategy that is most promising.

Emphasize benefits and cost savings:

Why would Georgia Tech benefit from this sustainability strategy?

What opportunities and cost savings would Georgia Tech gain?

Discuss the ways in which this strategy fulfills (at least one of, and perhaps all of) the Principles of Sustainability developed in class.

Sustainability Plan Implementation

Develop a plan for implementation.

What needs to be done? How feasible is it?

What incentives need to be created? What barriers exist?

What are Georgia Tech's strengths and weaknesses that will affect the feasibility of implementing this plan?

What are the goals of this sustainability plan?

How could Georgia Tech monitor progress toward these goals?

Identify the resources needed (e.g., financial resources, people, materials or technologies, expertise, cooperative agreements, further research) in order to implement the plan.

Also identify the key players and their roles in the implementation of your plan.

Results and Future Recommendations

Be specific. Be able to back up your recommendations.

Elaborate upon the main points in your Executive Summary.

Discuss benefits and possible barriers.

Where can Georgia Tech go from here?

Appendices

Provide data, maps, references, resources, etc.

General Format for Lessons Learned Reports

Please prepare your report to cover each of these seven main sections. In general, consider these issues and questions within each section. Feel free to discuss additional topics within each section. Your writing style can be in prose, bullet points, or both.

Executive Summary

Highlight main lessons learned (in 1-2 pages)
Use bullet-point format

Learning

What were the most valuable things that I learned?
Were there any surprises? What were they, and what did I learn from them?
How would I have done things differently?

Successes

What were the "successes"? Why were they successful?
What were the not-so-successful approaches, and why?

Barriers

What barriers and challenges did I encounter? How did I overcome them?

Resources

Which resources (including people) were most helpful or not as helpful?

Recommendations

Elaborate on points in Executive Summary

Provide recommendations for students trying to implement a sustainability project on campus

Provide recommendations for universities trying to implement sustainability in their curriculums and on their campuses

Appendices

Include information on resources, contact names, addresses, and phone numbers, information from other universities or organizations, references, web sites, transcripts of interviews, questionnaires, data sources, etc.