

CP 8823: URBAN ENVIRONMENTAL PLANNING & DESIGN

Georgia Institute of Technology
T/TH 8:05 – 9:25, Rm. 207, Architecture East
Periodic Lab: F 10:35 - Noon, Rm 359
Instructor: Brian Stone
Office Hours: Friday 10:00-12:00 or by appt.
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OVERVIEW

Urbanized regions are presently experiencing an unprecedented rate of population growth and development. In concert with a doubling of the global urban population, urbanized regions of the U.S. are expected to double the size of the built environment over the next twenty-five years. Mounting evidence of climate change, diminishing surface and groundwater resources, and a sharp reduction in global biodiversity illustrates the critical need for planners to articulate an ecologically sound blueprint for urban development. In light of this challenge, this course is designed to equip students with the conceptual and analytical tools required to assess and mitigate the impacts of urbanization on the environment.

The class is structured as both a discussion course and as a practicum. In the discussion component, readings, lectures, and group discussions explore the potential for ecology to provide a general theoretical framework for urban planning. Discussions and student presentations focus on a range of “green” design principles that seek to minimize the environmental impacts of urbanization through a reliance on renewable energy sources, closed-loop waste management systems, and a reduction of the urban ecological footprint. For each substantive area of the course, readings and lectures focus on the science, policy, and design aspects of a major resource issue within an urban context.

The practicum component of the course consists of computer lab sessions and a series of site visits. The lab element is designed to introduce students to a range of spatial analysis and remote sensing techniques that may be used to develop and incorporate ecological criteria into the land use and development process. Three site visits have been scheduled to expose students to a set of conventional technological and emerging design strategies for waste remediation, power generation, and urban greenspace preservation.

Students may expect the course to provide working knowledge of the following:

- Principles of ecology
- Basic remote sensing techniques
- Urban design as a tool for environmental management
- GIS as a tool for environmental impact analysis and project evaluation within a planning context

PREREQUISITE Students are expected to have very basic familiarity with GIS. The introduction offered through CP 6019 is sufficient. If you are concerned about this requirement, please see me.

EVALUATION

Students will be evaluated on three sets of tasks including a topic presentation and discussion participation, a series of lab assignments, and two in-class exams. A description of each requirement and its relative weighting in grading follows. It should be noted that the relative weighting attributed to each assignment is dependent upon a minimum level of student effort and may be adjusted in response to a failure to complete or to exhibit a sufficient effort in completing the following tasks. Also, please note that students will be expected to demonstrate a familiarity with the assigned readings and will be evaluated based on their comprehension of these readings.

Topic Presentation and Discussion Participation: Each student will be responsible for presenting on one assigned discussion topic to provide further depth to readings and class discussion. Student presenters will be allotted 10 - 12 minutes for the presentation and 5 minutes for discussion and will be evaluated by the instructor and their peers on four criteria including content, organization, visual presentation, and delivery. Each student is responsible for scheduling a meeting with the instructor at least one week in advance of his or her presentation. Students further will be evaluated in terms of their familiarity with the assigned readings during class discussions. **(15%)**

Lab Assignments: This course consists of five lab assignments emphasizing the basic spatial analysis and remote sensing techniques employed in a range of natural resource and land use planning applications. Each lab assignment consists of a data analysis component and a written report, and the final lab assignment will integrate skills obtained in the first four labs. While class time will be devoted to each assignment, students should expect to spend time outside of class completing the lab exercises and composing lab reports. Unless otherwise noted, all lab assignments will be due by the start of the following class period. Late submissions will be penalized a letter grade a day. **(45%)**

Exams: Two exams will be administered to provide students with an opportunity to demonstrate mastery of the concepts and tools presented in readings, lectures, labs, and site visits. Each exam will be a short answer, in-class exercise and has been scheduled to cover roughly the first and second halves of the course. **(40%)**

TEXTS

Balmori, Diana & Benoit, Gaboury. 2007. *Land and Natural Development Code*. Hoboken, NJ: Wiley & Sons.

Randolph, John. 2004. *Environmental Land Use Planning and Management*. Washington, DC: Island Press.

Texts may be purchased at the Engineer's Bookstore (748 Marietta Street). All other readings, as well as other course materials, are available as PDF files through the course website: <http://tsquare.gatech.edu/>