

CEE 6120A: Environmentally Conscious Design & Construction

Instructor: Dr. Annie Pearce

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Office Hours: By appointment

TIME: Fall Semester 1999
Lectures: Tuesdays & Thursdays, 3:00-4:30 PM

PLACE: S104 Physics Building

CREDITS: 3 Credits

ABSTRACT

This course provides an introduction to the strategies, analysis methods, and processes of environmentally conscious planning, design, construction, operation, deconstruction, and assessment of built facilities. The course presents a systematic framework for problem solving, decision making, and design using the principles of sustainability as guiding objectives. Tools, methods, and techniques for gathering information, generating, analyzing, and evaluating alternatives, and developing implementation strategies will be presented and demonstrated. Course activities include a combination of lectures, in-class discussions and exercises, and several out-of-class group and individual laboratories, projects, and assignments.

TEXT, READINGS, AND REQUIRED MATERIALS

There is no required text for this class. All required readings will be provided as handouts. Additional handouts will include speaker notes and other resources to support material covered in class.

Required materials for the class projects and assignments will cost approximately \$20, and will be discussed in class. It is the responsibility of the student to obtain all required materials as specified by the instructor. Additional materials and supplies may be needed for completion of other class projects. Selected equipment and tools are available by

A list of suggested readings for students interested in expanding their knowledge of topics covered in this course is provided in Attachment A. These references will be placed on reserve in the Architecture Library, or are available for in-office review in the instructor's office. Additional references on sustainable building are available for in-library review at the Institute for Sustainable Technology and Development in the French Building, or at the Southface Library on Poplar Street near the Atlanta Civic Center.

EDUCATIONAL AND LEARNING OBJECTIVES

The principal educational objectives of the course are to:

- 1) familiarize students with the concept of sustainability as it applies to the built environment, and its ramifications for design, decision making, and construction practice.
- 2) introduce students to a general approach for solving problems, and show how it can be applied to real world problems
- 3) acquaint students with the principal theories, materials, and construction techniques used to create environmentally conscious buildings or retrofit existing buildings to be more sustainable.
- 4) develop specific skills for interfacing with the public and presenting design recommendations.
- 5) develop a set of feasible solutions for a real world problem.
- 6) strengthen written and oral communication and presentation skills.
- 7) strengthen problem-solving skills, working both individually and in groups.

Upon completion of this course, you will be able to:

- 1) Identify a range of feasible and contextually appropriate actions for improving the sustainability of a built facility through multiple phases of its life cycle.
- 2) Compare these actions in terms of their relative performance according to traditional qualitative and quantitative criteria such as first- and life cycle cost, time, and quality.
- 3) Compare these actions in terms of their relative impacts on the facility's sustainability.
- 4) Design a recommended course of action to increase the sustainability of the facility, and plan its implementation.
- 5) Support your recommendations with convincing evidence and well-organized

COURSE DESCRIPTION

The course consists of a combination of interactive lectures, class discussions, and assignments. All students who are interested in applying principles of sustainability to building practice may take this class; the course is not limited to students with an engineering or construction background. There are no prerequisites for this course.

Class Participation

Active class participation is expected and required, since the course will include extensive in-class discussions among students. Different ways of participating in the course include, but are not limited to: 1) contributing in an active way to class discussion of concepts and ideas; 2) presenting a brief summary and/or personal interpretation of reading materials upon the instructor's request; and 3) presenting issues from out-of-class projects for general discussion related to the topic at hand.

Assignments

Assignments include one three-page critical analysis and group discussion, two individual projects and presentations, and two group projects and presentations. A description of the assignments and breakdown of their contribution to the student's grade is provided in a table on the next page of the syllabus. The purpose of the assignments is to provide the students with the opportunity to develop and strengthen the skills described in the table. Additional information about the nature and scope of each assignment will be provided over the course of the semester.

FEEDBACK AND GRADING

For each assignment, students will have the opportunity to submit drafts for instructor comment and review *prior to the due date*. The instructor will make every attempt to provide prompt feedback on all student submissions, either written or electronically. In addition, the instructor will provide office hours by appointment for student questions and consultations. If appropriate, the instructor will institute an open door policy for student consultations.

All assignments are due promptly at the beginning of class (3:00 PM) on the date noted in the course schedule, unless prior arrangements have been made and confirmed in writing by the instructor. The only exception to this rule is for the final group project submission, due at close of business (5:00 PM) on the last day of class (Friday, December 10, 1999). Based on the assignment schedule, 40% of the student's grade will be determined by mid-term, and will be disclosed to the student upon request at this time. An optional take-home final exam is available for any student seeking to improve his or her grade at the end of the quarter. Details about the take-home final will be provided in class.

Details and submission requirements for each assignment will be distributed in class on the assignment date noted in the attached class schedule.

NOTES

The course description and course schedule handouts provide the general framework for the course. However, the instructors reserve the right to make any modifications or changes to the course, depending on the class progress, or on any special circumstance that may arise during the quarter.