ConE 431- Sustainable Construction Methods and Processes

Spring Semester 2013

COURSE DESCRIPTION

This class requires two 75-minute lectures and one 100-minute recitation per week. This course introduces methods for evaluating projects and programs aimed at improving the long-term performance and sustainability of infrastructure projects.

PROFESSOR

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CONTACT INFORMATION

Office: Room 204, AG/IT Building

Office Hours: 1:00 – 4:00 PM Mondays and
2:00 – 4:00 PM Wednesdays

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CLASS MEETINGS INFORMATION

Time: 10:00 – 11:15 AM (lecture) on Mondays and Wednesdays and
10:00 – 11:40 AM (recitation, field trips and talks given by guest speakers) on Fridays

Location: Ag/IT 125

COURSE OBJECTIVES

1. Demonstrate an ability to evaluate and/or design whole or parts of projects, taking into account not only the financial and economic issues but also the social and environmental impacts affecting the sustainability of infrastructure.
2. Promote an approach to project evaluation that is based on an appreciation of the needs of society, the potential for sustainable development, and recognition of the problems that may result from poorly conceived or poorly implemented projects and programs.

3. Demonstrate to acquire knowledge of contemporary issues.

**REQUIRED COURSE MATERIALS**

**Textbook:**


**Supplementary reading:**


**ATTENDANCE POLICY**

Every student is expected to attend every class. No effort will be made to track down missing students and/or assignments. Each student is responsible for turning in the assigned work by the due time.

**COURSE GRADING**

Homework: 10%

Midterm exam: 30%

Final project presentation and report: 30%

Final exam: 30%

**GRADING SCALE**

90-100%: A;

80-89%: B;

70-79%: C;

60-69%: D;

<60%: F.
**COURSE SCHEDULE**

<table>
<thead>
<tr>
<th>Week No. &amp; Dates (mm/dd – mm/dd)</th>
<th>Weekly Contents</th>
<th>Reading Assignments</th>
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| 1 (1/14-1/18)                   | - Understand course objectives, attendance and grading policy.  
                                        - Introduction to sustainability in the built environment | ● Chapter 1 |
| 2 (1/21-1/25)                   | - MLK Holiday (Mon.)  
                                        - Green building | ● See handout distributed in the class |
| 3 (1/28-2/1)                    | - System performance | ● Chapter 2 |
| 4 (2/4-2/8)                     | - Basic economic concepts | ● Chapter 3 |
| 5 (2/11-2/15)                   | - Public perspective: economic, environmental, and social concerns | ● Chapter 4 |
| 6 (2/18-2/22)                   | - Comparing strategies for improving system performance | ● Chapter 5 |
| 7 (2/25-3/1)                    | - Equivalence of cash flows | ● Chapter 7 |
| 8 (3/4-3/8)                     | - Choosing a discount rate  
                                        - **Midterm Exam** | ● Chapter 8 |
| 9 (3/11-3/15)                   | **Spring break** | — |
| 10 (3/18-3/22)                  | - Financial assessment | ● Chapter 9 |
| 11 (3/25-3/29)                  | - Taxes, depreciation, and regulation | ● Chapter 10 |
| 12 (4/1-4/5)                    | - Developing a strategy to deal with a problem | ● Chapter 11 |
| 13 (4/8-4/12)                   | - Public-private partnership | ● Chapter 12 |
| 14 (4/15-4/19)                  | - Dealing with risks and uncertainties | ● Chapter 13 |
| 15 (4/22-4/26)                  | - Managing projects and programs | ● Chapter 14 |
| 16 (4/29-5/3)                   | - Toward more sustainable infrastructure  
                                        - Term project presentation | ● Chapter 15 |
| 17 (5/4-5/10)                   | **Final exam** will be held in the time scheduled by the university. | — |

**Notes:**
1. The instructor could add or delete some of the teaching material while teaching it. In short, course schedule listed above is for reference only and is subject to change.
2. The recitation will be devoted to the term project. The contents of the recitation will be subject to the availability of guest speakers during the session.