



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
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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:

1. *Toward More Sustainable Infrastructure: Project Evaluation for Planners and Engineers* by Carl D. Martland. ISBN: 978-0-470-44876-2

Supplementary reading:

2. *Guns, Germs, and Steel: The Fates of Human Societies* by Jared Diamond. ISBN 10: 0393038912
3. *Collapse: How Societies Choose to Fail or Succeed* by Jared Diamond. ISBN 10: 0670033375

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

Week No. & Dates (mm/dd – mm/dd)	Weekly Contents	Reading Assignments
1 (1/14-1/18)	<ul style="list-style-type: none"> Understand course objectives, attendance and grading policy. Introduction to sustainability in the built environment 	<ul style="list-style-type: none"> Chapter 1
2 (1/21-1/25)	<ul style="list-style-type: none"> MLK Holiday (Mon.) Green building 	<ul style="list-style-type: none"> See handout distributed in the class
3 (1/28-2/1)	<ul style="list-style-type: none"> System performance 	<ul style="list-style-type: none"> Chapter 2
4 (2/4-2/8)	<ul style="list-style-type: none"> Basic economic concepts 	<ul style="list-style-type: none"> Chapter 3
5 (2/11-2/15)	<ul style="list-style-type: none"> Public perspective: economic, environmental, and social concerns 	<ul style="list-style-type: none"> Chapter 4
6 (2/18-2/22)	<ul style="list-style-type: none"> Comparing strategies for improving system performance 	<ul style="list-style-type: none"> Chapter 5
7 (2/25-3/1)	<ul style="list-style-type: none"> Equivalence of cash flows 	<ul style="list-style-type: none"> Chapter 7
8 (3/4-3/8)	<ul style="list-style-type: none"> Choosing a discount rate Midterm Exam 	<ul style="list-style-type: none"> Chapter 8
9 (3/11-3/15)	Spring break	
10 (3/18-3/22)	<ul style="list-style-type: none"> Financial assessment 	<ul style="list-style-type: none"> Chapter 9
11 (3/25-3/29)	<ul style="list-style-type: none"> Taxes, depreciation, and regulation 	<ul style="list-style-type: none"> Chapter 10
12 (4/1-4/5)	<ul style="list-style-type: none"> Developing a strategy to deal with a problem 	<ul style="list-style-type: none"> Chapter 11
13 (4/8-4/12)	<ul style="list-style-type: none"> Public-private partnership 	<ul style="list-style-type: none"> Chapter 12
14 (4/15-4/19)	<ul style="list-style-type: none"> Dealing with risks and uncertainties 	<ul style="list-style-type: none"> Chapter 13
15 (4/22-4/26)	<ul style="list-style-type: none"> Managing projects and programs 	<ul style="list-style-type: none"> Chapter 14
16 (4/29-5/3)	<ul style="list-style-type: none"> Toward more sustainable infrastructure Term project presentation 	<ul style="list-style-type: none"> Chapter 15
17 (5/4-5/10) Finals week	Final exam will be held in the time scheduled by the university.	

Notes:

- 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.
- 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.