FORM 40 REV. 12/09

#### PURDUE UNIVERSITY

REQUEST TOR ADDITION, EXPIRATION,
OR REVISION OF AN UNDERGRADUATE COURSE
(10000-40000 LEVEL)

#37-10

DEPARTMENT	Civil	Engineerir	ng		EFFECTIV	E SESSION	Fall 2011				7
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Subject Abbreviation	CE	-	3220	Subject Abbreviation  Course Number				Summer CA	Check All That Apply:  Fall  MPUS(ES) INVOLN	✓ Spring	
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11/8/11

Engineering Faculty Document No. 37-10 May 6, 2010 Page 1 of 1

TO:

The Faculty of the College of Engineering

FROM:

The Faculty of the School of Civil Engineering

RE:

Cross-Listing Approval of CE 32201 with CEM 30100 Project Control and Life

Cycle Execution of Constructed Facilities

The Faculty of the School of Civil Engineering has approved the cross listing of the following course for a permanent course number. This action is now submitted to the Engineering Faculty with a recommendation for approval.

CE 32201

Project Control and Life Cycle Execution of Constructed Facilities

Sem. 1 & 2, Lecture 3, Cr.3.

Prerequisite: CE 22200 - Life Cycle Engineering and Management of

Constructed Facilities

Description:

This course continues an introduction to construction management and engineering concepts for future engineers, contractors and owner representatives involved at different stages in the life-cycle of constructed facilities. Building on the broad framework introduced in the prerequisite course, this course develops further ability with analytical tools and extends the basic foundation for advanced topics in construction engineering and management. Specifically, this course focuses on the principles, tools, and procedures used in the construction industry for project selection and financing, advanced planning and scheduling techniques,

resource management, and project monitoring.

Reason:

This new course is being cross-listed with CEM 30100 in conjunction with changes in the Construction Engineering and Management curriculum. The course has been offered as CE 49700-014/CEM 49700-002 in Fall 2009, Spring 2010, Fall 2010, Spring 2011, Fall 2011 with an average enrollment of 22 for CE

49700-014 and 12 for CEM 49700-002.

M. Katherine Banks

Bowen Engineering Head and

Professor

School of Civil Engineering

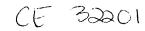
Makarand Hastak Professor and Head

Division of Construction Engineering

and Management

APPROVED FOR THE FACULTY OF THE SCHOOLS OF ENGINEERING BY THE ENGINEERING CURRICULUM COMMITTEE

ECC Minutes 45



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# CE 49700-014/CEM 49700-002 PROJECT CONTROL & LIFE CYCLE EXECUTION OF CONSTRUCTED FACILITIES

Instructor: Dr. Phillip S. Dunston

CIVL 1243; 765-494-0640; dunston@ecn.purdue.edu

General Office Hours: MTW 1500-1600; otherwise by e-mail or appointment

Teaching Assistant: Mr. Saumyang Patel

CIVL 1255; 494-0696; smpatel@purdue.edu

Office Hours: MW 1300-1430

Course Time and Location: T Th 1330-1445 CIVL 3153

#### Required Text

The collection of topics is taken from numerous sources. However, the greater part of the course is based upon readings from the following primary text:

Chris Hendrickson (1998). Project Management for Construction: Fundamental Concepts for Owners, Engineers, Architects and Builders, Department of Civil and Environmental Engineering, Carnegie Mellon University, Pittsburgh, PA 15213. Book is available online at <a href="http://pmbook.ce.cmu.edu/">http://pmbook.ce.cmu.edu/</a>

Other materials to be provided or referenced later by the instructor.

#### Supplementary References

Halpin, Daniel W. (2005). Construction Management, 3rd Edition, John Wiley and Sons, Inc.

E. H. (bud) Griffis and John V. Farr (2000). Construction Planning for Engineers, McGraw-Hill.

Jay S. Newitt (2005). Construction Scheduling: Principles and Practices, Pearson Prentice Hall

Henry Naylor (1995). Construction Project Management: Planning and Scheduling, Delmar Publishers.

Hinze, Jimmie (2008). Construction Planning and Scheduling, 3<sup>rd</sup> edition, Prentice Hall, Upper Saddle River, New Jersey.

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A Vista Blackboard section is being set up for this course. Subsequent to the first meeting, lecture notes, handouts, and other selected materials will be made available there.

## **Objective**

This course continues an introduction to construction management and engineering concepts for future engineers, contractors and owner representatives involved at different stages in the life-cycle of constructed facilities. Building on the broad framework introduced in the prerequisite course, this course introduces further awareness of analytical tools and extends the basic foundation for advanced topics in construction engineering and management. Specifically, this course focuses on the principles, tools, and procedures used in the construction industry for project selection and financing, advanced planning and scheduling techniques, resource management, and project monitoring.

### **Expected Outcomes**

By the end of this course, it is expected that, among other things, students will makes gains in the following aspects of their engineering education:

- an ability to use the techniques, skills, and modern engineering tools necessary for engineering practice
- an ability to design a process to meet desired needs within realistic constraints

# **Expectations and Grading**

Students are responsible to keep up with the readings associated with each topic as noted on the course syllabus. A series of focused individual assignments on specific topics covered in the course will be required in addition to two (2) midterm exams and a final exam. The dates of the midterm exams will be established at least two weeks before each.

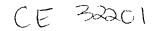
Performance Category	Percentage		
Homework	25%		
Midterm Exams (2)	50%		
Final Exam	25%		

A curve will <u>not</u> be used for grading. The minimum cutoff for an A is 90%, for a B is 80%, for a C is 70%, and for a D is 60%. Anything below 60% is considered a failing grade (F).

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1-4	4	Time value of money and engineering economy
5-6	2	Construction project financing (emphasis on owner)
7-8	1	Cost of owning and operating equipment. Optimum period of ownership.
7		Exam 1
8	1	Cost implications of labor and the company safety record
9	1	Relationship between risk and markup for bidding purposes.
9	0.5	Relationship between markup and expected profit
10	1	Work breakdown structure
11	1	Introduction to design of operations using simulation
12-13	1	Resource management, allocation, and leveling
12		Exam 2
14	0.5	Cost and time control
14	0.5	Repetitive scheduling method
15	0.5	Selected problems in construction engineering
16		Final Exam



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# Class Policy Regarding Attendance and Homework Assignments

- 1. Attendance is required, and subject to University class attendance policy as described in the following excerpt from University Regulations, Part 2, Section VI A (http://www.purdue.edu/univregs/pages/ac\_regs\_pro/classes.html): "Scheduled courses allow students to avoid conflicts and reflect the University's expectation that students should be present for every meeting of a class/laboratory for which they are registered....Ultimately students are responsible for all required coursework and bear full responsibility for any academic consequences that may result due to absence.." Therefore, a class sign-up sheet will be circulated during each lecture after the first week of classes and will become the record of each student's attendance during the semester. The instructor must be notified of any anticipated absences in writing (typed/word-processed memo or e-mail) and in advance, if possible, stating the date(s) and the reason for the absence. Otherwise, the absence will be noted as unexcused. Each student is allowed a maximum of two (2) unexcused absences. In addition, for seniors and graduates near the end of their program, up to a total of three (3) plant trips will be counted as excused absences. Three (3) unexcused absences will result in a grade reduction of one letter. Four (4) unexcused absences will result in a grade of "I" or "F" depending on whether or not the student is passing in all other respects at the time of the fourth absence. NO ABSENCES WILL BE EXCUSED ON SCHEDULED EXAM DATES.
- All homework assignments will be completed individually. Assignments will be turned in at the beginning of class on the date due. It is each student's responsibility to deliver any late assignments to the teaching assistant.
  - 3. Assignments that are submitted after class but by noon the following day will receive a penalty of 30%. From that point, assignments received up to one class session late will receive a penalty of 40%, and thereafter a 100% penalty. All assignments must be submitted in order to avoid receiving an "I" letter grade.
- 4. Homework should have a professional appearance, being neat, logically formatted, and legible (either on engineering paper or word processed). All final solutions should be clearly highlighted (boxed, underlined, bold etc.). Table or figure references should be clearly cited. The Grader reserves the right not to grade (0 credit for the problem) or to deduct points for messy homework.
- 5. Sometimes, a solution to a problem may be misunderstood. Due to the size of the class, however, only one resubmission (re-grading of a specific homework assignment) is allowed for the semester (except in the case of instructor/grader error that affects most or all of the class).

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6. Questions regarding grades earned should **first** be submitted to the grader in the form of a word-processed memo.

### **Emergency Procedures**

In the event of a major campus emergency, course requirements, deadlines and grading percentages are subject to changes that may be necessitated by a revised semester calendar or other circumstances beyond the instructor's and the student's control. Here are ways to get information about changes in this course.

- Course web page on Blackboard Vista (http://www.itap.purdue.edu/tlt/blackboard/index.cfm)
- An e-mail list has been set up for the instructor or TA to convey announcements, to the
  class. This list does not permit student-to-instructor or student-to-student
  communication. When needing to reply to any announcements, an e-mail message
  should be sent to either the instructor's or the TA's campus e-mail address (both shown
  above) as appropriate.

