# PURDUE UNIVERSITY

REQUEST FOR ADDITION, EXPIRATION, OR REVISION OF AN UNDERGRADUATE COURSE
(100-400 LEVEL)

<table>
<thead>
<tr>
<th>DEPARTMENT</th>
<th>Div of Construction and Engineering Mgmt</th>
</tr>
</thead>
<tbody>
<tr>
<td>EFFECTIVE SESSION</td>
<td>Fall 2009</td>
</tr>
</tbody>
</table>

**RATIONS:** Please check the items below which describe the purpose of this request:

- [ ] New course with supporting documents
- [ ] Add existing course offered at another campus
- [ ] Expiration of a course
- [ ] Change in course number
- [ ] Change in course title
- [ ] Change in course credit/type
- [ ] Change in course attributes (department head signature only)
- [ ] Change in instructional hours
- [ ] Change in course description
- [ ] Change in course requisites
- [ ] Change in semesters offered (department head signature only)
- [ ] Transfer from one department to another

**PROPOSED:**

<table>
<thead>
<tr>
<th>Subject Abbreviation</th>
<th>CEM</th>
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</thead>
<tbody>
<tr>
<td>Course Number</td>
<td>42500</td>
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</tbody>
</table>

**EXISTING:**

<table>
<thead>
<tr>
<th>Subject Abbreviation</th>
<th></th>
</tr>
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<tbody>
<tr>
<td>Course Number</td>
<td></td>
</tr>
</tbody>
</table>

**TERMS OFFERED:**

- [ ] Summer
- [ ] Fall
- [ ] Spring

**CAMPUS(ES) INVOLVED:**

- [ ] Calumet
- [ ] Cont Ed
- [ ] Ft. Wayne
- [ ] W. Lafayette
- [ ] Indianapolis
- [ ] N. Central
- [ ] Tech Statewide

**CONSTRUCTION PRACTICE PROJECT**

Abreviated title will beentered by the Office of the Registrar if omitted. (22 CHARACTERS ONLY)

<table>
<thead>
<tr>
<th>Equivalent Credit:</th>
<th>Yes</th>
<th>No</th>
</tr>
</thead>
<tbody>
<tr>
<td>Thesis Credit:</td>
<td>Yes</td>
<td>No</td>
</tr>
</tbody>
</table>

**COURSE ATTRIBUTES:**

- [ ] Pass/Not Pass Only
- [ ] Satisfactory/Unsatisfactory Only
- [ ] Repealable
- [ ] Maximum Repealable Credit:
- [ ] Credit by Examination
- [ ] Remedial
- [ ] Honors
- [ ] Full Time Privilege
- [ ] Off Campus Experience

**INSTRUCTIONAL TYPE:**

- Lecture
- Recitation
- Laboratory
- Studio
- Distance
- Clinic
- Experimental
- Research
- Ind. Study
- Practic/Observe

<table>
<thead>
<tr>
<th>Minutes</th>
<th>Meetings Per Week</th>
<th>% of Credit Allocated</th>
<th>Delivery Method</th>
<th>Delivery Medium (Audio, Internet, Live, Text-Based, Video)</th>
</tr>
</thead>
<tbody>
<tr>
<td>2 - 3</td>
<td>50 - 75</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

**COURSE DESCRIPTION (INCLUDE REQUISITES):**

The capstone senior design course for construction engineering and management majors. Working in teams in a realistic engineering practice environment, students use an actual construction project to accomplish open-ended project planning and systems design. Course covers construction project strategy, cost estimating and bidding, constructability analysis, project scheduling, contract conditions, project organization, site analysis and development, safety and quality management, and informations systems design. Comprehensive written submittals and oral presentations require integration of knowledge gained in previous courses and in construction internships. Prerequisites CEM29100.

**Calumet Department Head**

Date

Calumet School Dean

Date

Fort Wayne Department Head

Date

Fort Wayne School Dean

Date

Indianapolis Department Head

Date

Indianapolis School Dean

Date

North Central Department Head

Date

North Central Chancellor

Date

West Lafayette Department Head

Date

West Lafayette College/School Dean

Date

West Lafayette Registrar

Date

OFFICE OF THE REGISTRAR
PURDUE UNIVERSITY
REQUEST FOR ADDITION, EXPIRATION,
OR REVISION OF AN UNDERGRADUATE COURSE
(100-400 LEVEL)

DEPARTMENT: Div of Construction and Engineering Mgmt
EFFECTIVE SESSION: Fall 2009

TRUCTIONS: Please check the items below which describe the purpose of this request:
☐ 1. New course with supporting documents
☐ 2. Add existing course offered at another campus
☐ 3. Expiration of a course
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☐ 10. Change in course requisites
☐ 11. Change in semesters offered (department head signature only)
☐ 12. Transfer from one department to another

PROPOSED:
Subject Abbreviation: CEM
Course Number: 42500
Long Title: Construction Practice Project
Short Title: Construction Practice

EXISTING:
Subject Abbreviation:
Course Number:

TERMS OFFERED:
Check All That Apply:
☐ Summer
☐ Fall
☐ Spring

CAMPUS(ES) INVOLVED:
☐ Calumet
☐ Fort Wayne
☐ Indianapolis
☐ N. Central
☐ Tech Statewide
☐ W. Lafayette

CREDIT TYPE:

1. Fixed Credit: Cr. Hrs. 3.0
2. Variable Credit Range:
   Minimum Cr. Hrs.
   (Check One) To
   Maximum Cr. Hrs. Yes ☐ No ☐
3. Equivalent Credit: Yes ☐ No ☐
4. Thesis Credit: Yes ☐ No ☐

COURSE ATTRIBUTES: Check All That Apply
☐ 1. Pass/Not Pass Only
☐ 2. Satisfactory/Unsatisfactory Only
☐ 3. Repeatable
   Maximum Repeatable Credit: 1.0
☐ 4. Credit by Examination
☐ 5. Designator Required
☐ 6. Special Fees
☐ 7. Registration Approval Type
   Department ☐ Instructor ☐
☐ 8. Variable Title
☐ 9. Remodel
☐ 10. Honors
☐ 11. Full Time Privilege
☐ 12. Off Campus Experience

INSTRUCTIONAL TYPE

Lecture
Recolitation
Presentation
Seminar
Audio
Distance
Clinic
Experiential
Research
Ind. Study
Prac/Observ

Meeting Per Week

Weeks Offered
% of Credit Allocated
Delivery Method
(Asyn, Cr Syn)
Delivery Medium (Audio, Internet, Live, Text-based, Video)

CROSS-LISTED COURSES

COURSE DESCRIPTION (INCLUDE REQUIREMENTS):
The capstone senior design course for construction engineering and management majors. Working in teams in a realistic engineering practice environment, students use an actual construction project to accomplish open-ended project planning and systems design. Course covers construction project strategy, cost estimating and bidding, constructability analysis, project scheduling, contract conditions, project organization, site analysis and development, safety and quality management, and information systems design. Comprehensive written submittals and oral presentations require integration of knowledge gained in previous courses and in construction internships. Prerequisites CEM29100.

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Indianapolis Department Head
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Indianapolis School Dean
Date

North Central Department Head
Date
North Central Chancellor
Date

West Lafayette Department Head
Date
West Lafayette College/School Dean
Date
West Lafayette Registrar
Date
To: The Faculty of the College of Engineering
From: Division of Construction Engineering and Management
Subject: New Course

The Faculty of the Division of Construction Engineering and Management (CEM) has approved the following new course listed below. This action is now submitted to the Engineering Faculty with recommendation for approval.

CEM 42500 Construction Practice Project
Sem. 1 Class 5, cr.3.
Prerequisite: CEM 29100 – Construction Internship II
CEM 32100 – Construction Planning & Scheduling

Course Description: The capstone, senior design course for construction engineering and management majors. Working in teams in a realistic engineering practice environment, students use an actual construction project to accomplish open-ended project planning and systems design. Course covers construction project strategy, cost estimating and bidding, constructability analysis, project scheduling, contract conditions, project organization, site analysis and development, safety and quality management, and information systems design. Comprehensive written submittals and oral presentations require integration of knowledge gained in previous courses and in construction internships.

Reason: This course will replace the existing CE 42500 Construction Practice Project course in fulfillment of the Construction Engineering (CNE) degree requirements. The syllabus of the existing course is attached. This course will be offered in the Fall semester. CEM majors must enroll in this course to fulfill degree requirements.

Professor and Head

Makrand Bhatk<br>February 10, 2009

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

ECC Minutes 4/1/09 #23
Date 4/1/09
Chairman ECC R. Kra
A. COURSE CONCEPT:

This is the capstone course in your BSCNE program. You will have the opportunity to integrate and apply a wide range of subjects that have already been addressed both in the classroom and during your internships. The framework for the course is realistic, and the course is based on an actual construction project currently underway. The project and work in this course is very similar to the work that will be expected of you in your early career after graduation.

Your assignments will be performed as a member of a student team. This “learning by doing” in teams is a valuable part of your Purdue education. You should be prepared to participate and fully utilize your abilities and knowledge, helping your team complete its tasks to the highest standards attainable.

B. OBJECTIVES OF THE COURSE: To provide the student knowledge and experience in:

1. All phases and aspects of construction project planning, engineering, and management at the project level;
2. The complexities and uncertainties of planning and decision-making in a realistic environment;
3. How construction activities by the constructor are influenced by owner needs and project design basis and features;
4. Methods and skills of oral and written communication; and
5. Methods, techniques and experience of working in teams.

C. EXPERIENTIAL LEARNING MEANS...

1. Submittals. Working as a student team, you will perform realistic and practical tasks, developing and presenting written submittals based on an actual, current construction project. You will be assigned in teams of four and five and will role-play a general contractor firm throughout the semester. You will develop open-ended plans, submittals and presentations, which will require planning, research, analysis, and decision-making just as in “real-world” construction engineering and management. You will make oral presentations on multiple project phases.
2. Case Studies. Problem identification, analysis, and recommendations about complex, real-world issues in construction will be required in the case-study problems utilized in this class. Each group is expected to utilize a Mentor firm as a resource in applying construction management principles and techniques to the aspects of the assigned community project.

D. TEXT: None required. Periodic homework assignments with handouts. Your team may have some costs for printing and production of your submittals and presentation materials.
E. TOPICS COVERED IN THE COURSE
1. Development and characteristics of construction documents; owner needs and criteria; defining project scope
2. Construction company marketing
3. Contractor’s strategy for project execution
4. Constructability analysis
5. Pre-construction planning
6. Construction cost estimating and bidding
7. Project scheduling
8. Contractor conditions, general and special
9. Site analysis and site development
10. Organizing for the project: people, assignments, responsibilities
11. Project Communications and information systems planning
12. Temporary structures or Utilities
13. Quality assurance and quality control
14. Construction safety
15. Equipment planning and utilization
16. Materials management and Source Planning
17. Change orders
18. Project turnover
19. Issues of ethics in construction business
20. Work Breakdown Structures

F. STUDENT TEAM SUBMITTALS: GRADE SCALE

As a team, performing all the roles of a general contractor, you will develop and submit professionally prepared, thorough submittals, listed below (See attached Project Deliverables). Written, advance assignments for each submittal will provide you specific requirements and expectations.

Letter Grades:
A = 90.0 and above
80.0 <= B < 90
70.0 <= C < 80
 F < 70

Since this course is the culmination of many classes here at Purdue University a high level of proficiency is required in order to pass, therefore anything below a grade of “C” will be failing. The point totals above are initial estimates and may change throughout the semester. Individual grades will be based on the grade points earned by the team, individual points, and the results of the peer evaluation.

Team Grading Policy: Each student on a team will receive the same grade (the team grade) on and the Final Presentation. At semester end, you will submit a Peer Evaluation Form, with which you can record any significantly better or lesser efforts by your teammates throughout the semester. This evaluation can result in an adjustment to your grade by a letter grade or more. An example of the form is attached at the end of this syllabus.

Purdue University
Fall 2008 CE 42500
To: The Faculty of the College of Engineering
CC: Engineering Curriculum Committee (ECC)
From: Division of Construction Engineering and Management;
       School of Civil Engineering
Date: 11/6/2008
Re: EFD No. 65-07 New Course – Construction Practice Project

This memo states that we are both in agreement that EFD No. 65-07 should move forward per the approval of the Faculty of the Division of Construction Engineering and Management. The new course, CEM 42500 Construction Practice Project will replace the existing CE 42500 Construction Practice Project per the approval of the Faculty of the School of Civil Engineering.

A separate EFD No. 89-07 will be submitted by the School of Civil Engineering, indicating the approval of the Faculty to delete CE 42500.

Makarand Hastak
November 6, 2008
Professor and Head
Division of Construction Engineering and Management

M. Katherine Banks
November 6, 2008
Bowen Engineering Head and Professor
School of Civil Engineering