# PURDUE UNIVERSITY

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

**DEPARTMENT:** Engineering  
**EFFECTIVE SESSION:** Spring 2011

**INSTRUCTIONS:** 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
- [X] Change in course title
- [X] 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>Subject Abbreviation</th>
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<tbody>
<tr>
<td>CE</td>
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<table>
<thead>
<tr>
<th>Course Number</th>
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<tbody>
<tr>
<td>48700</td>
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<table>
<thead>
<tr>
<th>Long Title</th>
<th>Short Title</th>
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<tbody>
<tr>
<td>Civil Engineering Design Project</td>
<td>CE Design Project</td>
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</table>

Abbreviated title will be entered by the Office of the Registrar if omitted. (22 CHARACTERS ONLY)

**CAMPUS(ES) INVOLVED:**

- [ ] Calumet
- [ ] Cont Ed
- [X] Ft. Wayne
- [ ] N. Central
- [ ] Tech Stato/ide
- [ ] W. Lafayette
- [ ] Indianapolis

**TERMS OFFERED:**

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

**CREDIT TYPE:**

- Fixed Credit: Cr. Hrs.
- Variable Credit Range: Minimum Cr. Hrs. (Check One) To or Maximum Cr. Hrs.
- Equivalent Credit: Yes[^] No[^]
- Thesis Credit: Yes[^] No[^]

**INSTRUCTIONAL TYPE:**

- Lecture
- Recitation
- Presentation
- Laboratory
- Lab Prep
- Studio
- Distance
- Clinic
- Experiential
- Research
- Ind. Study
- Pract/Obs

**MINUTES PER MTG:**

100

**MEETINGS PER WEEK:**

1

**WEEKS OFFERED:**

10

**% OF CREDIT ALLOCATED:**

100

**DELIVERY METHOD:**

- Asyn.
- Synchronized

**DELIVERY MEDIUM:**

- Audio
- Internet
- Live
- Text-Based
- Video

**COURSE DESCRIPTION (INCLUDE REQUISITES):**

P: CE 345 or CE 365 or CE 476 or CE 418 and consent of instructor. Planning, analysis, and design of a civil engineering project; an integrated and realistic group project involves as much as possible all major aspects of the civil engineering profession. Emphasis on teamwork, project management, testing through simulation or modeling, oral and written communications.

**Cross-Listed Courses**

**OFFICE OF THE REGISTRAR**

Calumet Department Head:  
Date: [Signature] 4/9/10

Calumet School Dean:  
Date: [Signature] 4/9/10

Ft. Wayne Department Head:  
Date: [Signature] 4/9/10

Ft. Wayne School Dean:  
Date: [Signature] 4/9/10

Indianapolis Department Head:  
Date: [Signature] 4/9/10

Indianapolis School Dean:  
Date: [Signature] 4/9/10

North Central Department Head:  
Date: [Signature] 4/9/10

North Central Chancellor:  
Date: [Signature] 4/9/10

West Lafayette Department Head:  
Date: [Signature] 4/9/10

West Lafayette College/ School Dean:  
Date: [Signature] 4/9/10

West Lafayette Registrar:  
Date: [Signature] 4/9/10
Required Course: CE 487 - Civil Engineering Design Project
Offered each fall and spring

Catalog Data: Class: 3. Credits: 3.
Planning, analysis, and design of a civil engineering project; an integrated and realistic group project involves as much as possible all major aspects of the civil engineering profession. Emphasis on teamwork, project management, testing through simulation or modeling, oral and written communications.

Prerequisites: CE 345- Transportation Engineering and/or CE 365- Environmental Engineering and/or CE 418: Hydraulics Engineering and/or CE 478- Design of Concrete Structures and based on the approval of the advisor. First semester senior class standing or higher and approval of advisor.

Corequisite: CE 401- Civil Engineering Profession and Practice

Required Textbook: N/A

References: Determined by the instructor.

Course Objectives: To develop capabilities of students to solve real-life problems. Students have to apply knowledge from their previous course work to accomplish projects formulation to prototype evaluation.

Schedule: One lab of 100 minutes per week.
Weekly meeting with the project advisor.

Lecture Topics
1. Introduction, discuss the Capstone Senior Design Guidelines 1 class
2. Formulation of Problem Statement 1 class
3. Brainstorming and Conceptual Designs 1 class
4. Evaluation of Conceptual Designs 1 class
5. Detailed Design 1 class
6. Knowledge of contemporary issues 2 classes
7. The broad education necessary to understand the impact of Engineering solutions in global and societal contexts 2 classes
8. Recognition of the need for life-long learning 2 classes
9. Understanding professional and ethical responsibility 2 classes
10. Discussion related to oral presentations 1 class
11. Oral Presentations 1 class

Course Outcomes: Upon successful completion of this course, students shall be able to:
1. understand how Federal/State environmental regulations and standards are developed as well as their impact [f (7), h (9), i (2), j(9)]
2. formulate a problem statement [a(1), c (3), e (2)]
3. develop multiple preliminary design solutions using brainstorming technique [a(1), c (3)]
4. evaluate alternative solutions and select the optimum alternative using a well defined criteria [a(1), c (3), e(2), k (9)]
5. successfully develop detailed final design for the project considering safety, economical, ethical, professional, and environmental issue [a(1), c (3), e(2), f (7), h (9)]

6. develop technical drawings and specification for the project, if needed [e (3), e(2), f (7), g (9), k (9)]

7. preliminary cost estimate and schedule for project activities, in needed [a (1), g (8), k (9)]

8. write technical reports clearly and concisely [g (8)]

9. The ability to present preliminary work both written and orally [g (8)]

10. The ability to function within a team [d(5)]

11. present final design to technical and non-technical professionals [g (8)]

12. Understanding of the ethical issues those are associated with the engineering profession [f (7)]

13. Knowledge of contemporary issues [I( 9)]

14. Understanding of the impact of civil engineering on society [h (9)]

ABET category:

Engineering science: 0 credits or 0%
Engineering design: 3 credits or 100%