TO: The Faculty of the College of Engineering
FROM: The Faculty of the Division of Construction Engineering and Management
RE: New Course - CEM 45500 Temporary Structures in Construction

The faculty of the Division of Construction Engineering and Management has approved the following new course. This action is now submitted to the Engineering Faculty with a recommendation for approval.

Course no. CEM 45500 Temporary Structures in Construction
Semester 1, Lecture 1, Cr. 3
Prerequisite: CE 37100, CE 38300

Description: CEM 45500 will cover the design and construction of various temporary structures and systems used in building and transportation construction. The course describes not only design issues of temporary structures such as formwork, falsework, bracing, earth retention systems, scaffolding, cofferdams, and so forth by providing lectures and design examples, but it also covers business aspects associated with the design and construction of temporary structures in the real world such as business practice, legal aspects, and design philosophy.

Reason: CEM 45500 has been offered since the spring of 2011 as CEM 49700 Temp Structures Construction. The experimental version has been a Technical Elective and the Faculty has determined the course should be assigned a permanent course number for inclusion in the Plan of Study in Construction Engineering as a Technical Elective.

Makarand Hastak, Ph.D., PE, CCP
Professor and Head of Construction Engineering and Management
Professor of Civil Engineering

APPROVED FOR THE FACULTY
OF THE SCHOOLS OF ENGINEERING
BY THE ENGINEERING
CURRICULUM COMMITTEE
ECC Minutes 4/29/14
Date 4/29/14
Chairman ECC [Signature]
CEM 497 – Temporary Structures in Construction

Instructor: Bob McCullough Ph.D. P.E., PTC B2-103, 494-0643, bgm@purdue.edu.

This course covers the design and construction of various temporary structures and systems used in building and transportation construction. The course describes not only design issues of temporary structures such as formwork, falsework, bracing, earth retention systems, scaffolding, cofferdams, and so forth by providing lectures and design examples, but it also covers business aspects associated with the design and construction of temporary structures in the real world such as business practice, legal aspects, and design philosophy. Course content, assignments, quizzes, and tests will be online through a course website and twice-a-week classes.

The class website address is http://rebar.ecn.purdue.edu/cem497. All course content is located on the website.

The course is a design course. Students will be expected to learn design procedures for the various systems shown below.

Those interested in obtaining a professional engineering (PE) license will see some of these topics on the PE exam.

Below is the list of course topics that will be covered:

- Business Practices
- Legal Aspects
- Design Philosophy
- Codes & Standards - Design Loads During Construction (ASCE Design Standards)
- Construction Equipment Loads
- Timber Design
- Wind Loads
- Formwork Design
- Slip Forming
- Shoring
- Scaffolding
- Cofferdams
- Sheeting
- Braced Excavations
- Under Pinning & Shoring
- Bracing & Guying
- Bridge Construction
- Masonry Construction
- Dewatering

Time: Tuesday, Thursday 1:30-2:45, ARMS 1103
Lectures will be in digital format and use the web tool paperlessMe. You will find it useful to bring a laptop or tablet to class. All content and lectures will be delivered in digital format.

Recommended Prerequisites:

CE 371 – Structural Analysis
CE 383 - Geotechnical Engineering I
CE 470 - Structural Design in Metals

Grade Criteria: Quizzes - 60% (Lowest quiz score will be dropped.
See course calendar for quiz schedule. Schedule may vary.)
Class Exercises – 7%
Project - 13% (Group project)
Final - 20%

There will be homework, but no credit is given. It is highly recommended that you complete the homework assignments because the majority of the quizzes will be based off the homework.

The semester project description will be provided after Spring Break.

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. Changes to the course will be reflected on the course web site. You may email me at bgr@purdue.edu and my office phone is 494-0643.

Class rules:

1. No food
2. No drink
3. No newspapers or magazines
4. No cell phone use including texting

The objective of the class is to develop an understanding on design and performance of these various systems. With this knowledge comes understanding of the importance and value of these systems and the responsibilities that you will carry in your professional career.
PURDUE UNIVERSITY  
REQUEST FOR ADDITION, EXPIRATION,  
OR REVISION OF AN UNDERGRADUATE COURSE  
(10000-49999 LEVEL)  

DEPARTMENT: Construction Engineering and Management  
EFFECTIVE SESSION: Fall 2015 (201510)  

INSTRUCTIONS: 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  
☐ 4. Change in course number  
☐ 5. Change in course title  
☐ 6. Change in course credit/type  
☐ 7. Change in course attributes (department head signature only)  
☐ 8. Change in instructional hours  
☐ 9. Change in course description  
☐ 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: 45500  
Long Title: Temporary Structures in Construction  
Short Title: Temp Structures Construction  

EXISTING:  
Subject Abbreviation:  
Course Number:  
Long Title:  
Short Title:  

TERMS OFFERED:  
Check all that apply:  
☐ Spring  
☐ Fall  
☐ Summer  

CAMPUS(ES) INVOLVED:  
☐ Calumet  
☐ Cont Ed  
☐ Ft. Wayne  
☐ Indiana Tech  
☐ South Bend  
☐ West Lafayette  
☐ N Central  
☐ Tech Statewide  
☐ Vt. Lafayette  
☐ Indianapolis  

CREDIT TYPE:  
1. Fixed Credit: C. Hrs. 3  
2. Variable Credit Range:  
   Minimum C. Hrs:  
   Maximum C. Hrs:  
   Equivalent Credit: Yes  

COURSE ATTRIBUTES: Check all that apply:  
1. Pass/Not Pass Only  
2. Satisfactory/Unsatisfactory Only  
3. Repeatable  
4. Credit by Examination  
5. Fees  
   ☐ Course Fee  
   ☐ Lab Fee  
   ☐ Rate Request  
   ☐ Include comment to explain fee  
6. Instructor  
7. Variable Title  
8. Honors  
9. Full Time Privilege  
10. Off Campus Experience  

Schedule Type:  
Lecture: 78  
Recitation:  
Presentation:  
Laboratory:  
Lab Prep:  
Studio:  
Distance:  
Online:  
Experiential:  
Research:  
Ind. Study:  
Pract/Clin/city:  

Cross-Listed Courses:  
RECEIVED:  
APR 2 9 2014  
OFFICE OF THE REGISTRAR  

COURSE DESCRIPTION (INCLUDE REQUIREMENTS/RESTRICTIONS):  
CEM 45500 will cover the design and construction of various temporary structures and systems used in building and transportation construction. The course describes not only design issues of temporary structures such as formwork, falsework, bracing, earth retention systems, scaffolding, cofferdams, and so forth by providing lectures and design examples, but it also covers business aspects associated with the design and construction of temporary structures in the real world such as business practice, legal aspects, and design philosophy. Prerequisite: CE 37100, GE 39300.  

COURSE LEARNING OUTCOMES:  
The objective of the class is to develop an understanding of design and performance of these various systems. With this knowledge comes understanding of the importance and value of these systems and the responsibilities that you will carry in your professional career.  

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 Faculty Senate Chair:  
Date:  
Vice Chancellor for Academic Affairs:  
Date:  

West Lafayette College Dean:  
Date:  
West Lafayette College/School Dean:  
Date:  

OFFICE OF THE REGISTRAR  

Liam 5/11/14  
EFD 47-14  

 ceasefire 5/15/14