REGULAR COURSE SYLLABUS

College of: Professional Studies

Department: Engineering and Engineering Technology

Prefix & Course Number: SSE 4500  Crosslisted With*: 

Course Title: Refurbishment of Structures

 Transcript Course Title (30 characters): Refurbishment of Structures

Check All That Apply: Required for Major:  Required for Minor:  Specified Elective:  
Required for Concentration:  Elective: X  Service Course:  

To receive Title IV financial aid funds, all institutions of higher education must comply with the federal definition of a credit hour. The Higher Learning Commission requires institutions to maintain policies and procedures for verifying compliance with this definition.

**Federal Credit Hour Definition:** A credit hour is an amount of work represented in intended learning outcomes and verified by evidence of student achievement that is an institutionally-established equivalency that reasonably approximates not less than:  
(1) one hour of classroom or direct faculty instruction and a minimum of two hours of out-of-class student work each week for approximately fifteen weeks for one semester or trimester hour of credit, or ten to twelve weeks for one quarter hour of credit, or the equivalent amount of work over a different amount of time; or (2) at least an equivalent amount of work as required in paragraph (1) of this definition for other activities as established by an institution, including laboratory work, internships, practica, studio work, and other academic work leading toward the award of credit hours. 34CFR 600.2 (11/1/2010)

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<th>3 (3+0)</th>
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<td>Lecture</td>
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<td>Additional Student Work Hours per course:</td>
<td>90</td>
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OR

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*If crosslisted, attach completed Course Crosslisting Agreement Form*
Prefix and Course Number: SSE 4500

Variable topics umbrella course: No X Yes _____ If yes, number of credits/repeats allowed ____

Specified repeatable course: No X Yes _____ If yes, number of credits/repeats allowed ____

Prerequisite(s): SSE 2150 with “C” or better or Permission of Instructor
Corequisite(s): ______
Prerequisite(s) or Corequisite(s): ______

Banner Enforced Coding:
Prerequisite(s): SSE 2150 with “C” or better
Corequisite(s): ______
Prerequisite(s) or Corequisite(s): ______

Registration restrictions: Level _____ Class _____ Program/Major _____ Student attribute _____

Catalog Course Description:
In this course students study technologies used in restoration, repair, and strengthening of civil engineering structures in order to extend their service life for a sustainable built environment. This course addresses the refurbishment of contemporary steel, concrete, timber, and masonry structures, as well as bridges and historic structures.

Specific Variable Topics Course Description (if applicable, umbrella course description included above):

Required Reading and Other Materials will be equivalent to:

Specific, Measurable Student Behavioral Learning Objectives:
Upon completion of this course the student should be able to:
1. Assess existing structural conditions.
2. Distinguish the aspects of structural refurbishment.

Detailed Outline of Course Content:
I. The Challenges of Refurbishment
II. Investigating Existing Conditions
   A. Detection of Deterioration
   B. Determination of the Material Properties
   C. Load Testing
   D. Residual Service Life Assessment
III. Refurbishment of Contemporary Structures
   A. Refurbishment of Industrial Steel Structures
   B. Strengthening and Repair of Concrete Building Structures
   C. Strengthening and Repair of Timber Structures
   D. Repair of Masonry Structures
IV. Restoration of Historic Buildings
V. Strengthening and Repair of Bridges

Evaluation of Student Performance:
1. Assignments
2. Examinations
3. Final Paper