UK
UNIVERSITY OF KENTUCKY

TRANSMITTAL

DATE: October 22, 2003

TO: Rebecca Scott
Senate Council

FROM: Lissa Holland
Graduate Council

The Graduate Council met on September 18, 2003 and approved the following:

COLLEGE OF ENGINEERING

Civil Engineering

CE 589 Design of Structural Systems (4 credits)

Change to:

CE 589 Design of Structural Systems (3 credits)
Design loads, structural systems and bracing. Analysis and design of buildings and bridges. Use of computer systems for design projects. Written and oral presentations required.
Prerequisite(s): CE486G andCE487G; Prereq. or concur: CE579; or consent of instructor. Lecture/Lab: 2:1.

UNIVERSITY OF KENTUCKY
APPLICATION FOR CHANGE IN EXISTING COURSE: MAJOR & MINOR

Submitted by College of ___Engineering___   Date ___11/26/02___

Department/Division offering course ___Civil Engineering___

2. Changes proposed:
   (a) Present prefix & number ___CE589___   Proposed prefix & number ___CE589___

   (b) Present Title ___Design of Structural Systems___

   New Title ___Design of Structural Systems___

   (c) If course title is changed and exceeds 24 characters (Including spaces), include a sensible title (not to exceed 24 characters) for use on transcripts:

   (d) Present credits: ___4 credit hrs___   Proposed credits: ___3 credit hrs___

   (e) Current lecture: laboratory ratio ___3:3___   Proposed: ___2:1___

   (f) Effective Date of Change: (Semester & Year)   FALL 2004

3. To be Cross-listed as: _____   _____
   <div align="center">Prefix and Number</div>   <div align="center">Signature: Department Chair</div>

4. Proposed change in Bulletin description:
   (a) Present description (including prerequisite(s):
   Design loads and structural systems. Systems concepts in planning, analysis, design, and construction of structures. Buildings, bridges, special structures and foundations. Computer aided design and drafting (CADD) utilizing microcomputers. Written and oral presentations of student projects will be required.
   (b) New description:
   Design loads. Structural systems and bracing. Analysis and design of buildings and bridges. Use of computer systems for design projects. Written and oral presentations required.

   (c) Prerequisite(s) for course as changed: CE486G and CE487G; Prereq or concur:CE579; or consent of instructor

5. What has prompted this proposal?
   Curriculum change. Part of the material has been covered by the capstone design course (CE429). CE589 has been reduced from a capstone design course to a technical elective course.

6. If there are to be significant changes in the content or teaching objectives of this course, indicate changes:
   General technical topics have been shifted to the new capstone design course (CE429). The special features related to structural system design will be covered exclusively.

7. What other departments could be affected by the proposed change?
   None

8. Is this course applicable to the requirements for at least one degree or certificate at the University of Kentucky?   [X] Yes   [ ] No

9. Will changing this course change the degree requirements in one or more programs?*   [X] Yes   [ ] No
   If yes, please attach an explanation of the change.*   See above 5. and 6.

10. Is this course currently included in the University Studies Program?   [ ] Yes   [X] No
    If yes, please attach correspondence indicating concurrence of the University Studies Committee.

11. If the course is a 100-200 level course, please submit evidence (e.g., correspondence) that the Community College System has been consulted.

*NOTE: Approval of this change will constitute approval of the program change unless other program modifications are proposed.
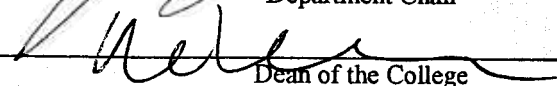
ORIGINAL

UNIVERSITY OF KENTUCKY
APPLICATION FOR CHANGE IN EXISTING COURSE: MAJOR & MINOR

12. Is this a minor change? ☐ Yes ☒ No
(NOTE: See the description on this form of what constitutes a minor change. Minor changes are sent directly from the Dean of the College to the Chair of the Senate Council. If the latter deems the change not to be minor, it will be sent to the appropriate Council for normal processing.)

13. Within the Department, who should be consulted for further information on the proposed course change?

Name: Dr. Shien T. Wang   Phone Extension: 257-4916

Signatures of Approval:

_____   1/24/03
Department Chair   Date

_____   3/5/03
Dean of the College   Date

                                             3/17/03
                                             Date of Notice to the Faculty

_____   _____
**Undergraduate Council   Date

Gannine Blackwell   9-22-03
**Graduate Council   Date

_____   _____
**Academic Council for the Medical Center   Date

_____   _____
**Senate Council   Date of Notice to University Senate

**If applicable, as provided by the Rules of the University Senate.

ACTION OTHER THAN APPROVAL

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The Minor Change route for courses is provided as a mechanism to make changes in existing courses and is limited to one or more of the following:

a. change in number within the same hundred series;
b. editorial change in description which does not imply change in content or emphasis;
c. editorial change in title which does not imply change in content or emphasis;
d. change in prerequisite which does not imply change in content or emphasis;
e. cross-listing of courses under conditions set forth in item 3.0;
f. correction of typographical errors. [University Senate Rules, Section III - 3.1]

Rev 8/02

[Print Form]   [Clear Form]

CE 589 Design of Structural Systems

Catalog data

Design loads. Structural structural systems and bracing. Analysis and design of buildings and bridges. Use of computer systems for design projects. Written and oral presentations required. Prereq: CE487G and CE486G; Prereq or concur: CE579; or consent of instructor.

Textbook

Wolfgang Schueller, The Design of Building Structures, Prentice Hall, New Jersey, 1996.

Reference

AASHTO Standard Specifications for Highway Bridges
Building Design Codes (Kentucky Building Code, UBC, ANSI)
STAADPRO User's Manual
RAM Integrated System Manual
COMSPAN and CONSYS Manuals
AutoCAD User's Manual
SIMONS User's Manual
AISC Manual of Steel Construction (LRFD)
ACI Reinforced Concrete Design Specifications

Coordinator

S. T. Wang, Professor

Prerequisites

CE 487G and CE 486G; Prereq or concur: CE 579; or consent of instructor

Topics

1. Introduction
2. Computer aided analysis and design
3. STAAD PRO and RAM INTEGRATED Structural Analysis and Design System
4. Finite Element Method and Modeling
5. Design sequence and procedure
6. Design loads
7. Design of buildings and foundations
8. Architectural Considerations

9. Design of high-rise structures
      Wind and earthquake load
      Fireprotection
      Bracing systems
      Structural systems
      Structural modeling
      Future trend in design
      Case studies
10. Design of special structures
      Structural forms
      Classification of special structures
      Space trusses and frames
      Folded plates
      Shell structures
      Suspension type structures
      Cable stayed structures
      Arch systems
      Domes
      Tensile membrane structures
      Pneumatic structures
      Case studies
11. Prestressed and precast concrete
12. Design of bridges
      ASSHTO bridge design loads
      Influence lines
      Force envelope
      Bridge types
      ASSHTO bridge design specifications
      Design procedures
      CONSPAN and SIMONS computer software
      Case studies
13. Structural failures
      Building failures
      Bridge failures
      Structural redundancy
      Factors affecting structural stability
      Lessons learned from failures
14. CAD
      Software selection
      Hardware
      Productivity
      Quality Assurance
      Responsibility
      Structural integrity and safety

Goals

This is a technical design elective to teach students who are interested in behavior and design of structural systems (buildings and bridges, steel and concrete) utilizing computers in the design process so that the students will become familiar with skills required for the overall structural system analysis and design.

Specific Learning Outcomes

Objective 1. To understand basic design criteria, and procedure of structural systems,

Objective 2. To understand various theoretical background of structural systems through case studies,

Objective 3. To use computer software for structural analysis and design and for architectural and engineering drawings,

Objective 4. To work cooperatively through team work, and

Objective 5. To communicate through written and oral presentations.

Laboratory

Two lecture hours are spent on subjects listed under topics. One laboratory hour is spent on two design projects, one building and one interstate highway bridge. This laboratory hour is mainly for team meetings.

ABET Category

Engineering design: 3 credit hrs or 100%

Course Relevance

This is a technical design elective for students who are interested in structural Analysis and design. The students will have the opportunity to carry out realistic design projects in building and bridge, which is similar to the work performed by the professional engineers. This course is intended to provide students with competent professional background and to serve as a prelude before they enter the work force.

Grading

Homework	20%
Design Projects (written reports and graphics)	60%
Presentation and Team Communication Skills	20%

Students with graduate standing additional assignments are required.

From:	Grzegorz Wasilkowski [greg@cs.uky.edu]
Sent:	Wednesday, September 10, 2003 10:59 AM
To:	Holland, Lissa
Cc:	Grzegorz Wasilkowski
Subject:	RE: Graduate Council Agenda - September 4, 2003

Hi Lissa

  I got in touch with the person responsible for CE589 and I will mail you my report today.

  In my opinion, the changes are very reasonable and they affect mainly the undergraduate program. As far as the graduate students are concerned, they would benefit from the changes -- the new version of CE 589 would now focus on structural system design, with the general technical topics (that should be known to graduate students) being shifted to a new undergraduate course.

  I decided to write this in the e-mail (the form does not provide enough
space) in case Dr. Blackwell would like the Council to vote on the course when I am gone
This would be perfectly fine with me.

See you in a month,

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Greg ==================================================================
Grzegorz (Greg) W. Wasilkowski    greg@cs.uky.edu
Professor and Director of Graduate Program
Department of Computer Science    http://www.cs.uky.edu/~greg/
777 Anderson Hall                 office:     859-257-8029
University of Kentucky            department: 859-257-3961
Lexington, KY 40506-0046          fax:        859-323-1971
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GRADUATE COUNCIL

INVESTIGATOR REPORT

Course/Courses/Program: CE589 / CIVIL ENGINEERING

Category (check one):   ☐ New   ☑ Change   ☐ Drop

Date for Council Review: _____

Recommendation (circle one): ☑ Approve   ☐ Approve with Reservation   ☐ Disapprove

Investigator's Signature: _____

INSTRUCTIONS:

The following questions are included as an outline only. Be as specific and as brief as possible. If the investigation was routine, please indicate this. Attach supplements as needed. Please return the form to Lissa Holland, 355 P.O.T., 0027, at least two days before the next Council meeting.

1. List any modifications made in the course proposal as submitted originally and reason(s) why.

No modifications were needed.

2. If no modifications were made, review considerations which arose during the investigation and the resolutions.

Originally, point 9 was not clear. After a discussion, it turns out that the changes will result in curriculum changes of the undergraduate program only. More specifically, CE589 was a required course for undergraduate students; now CE429 is required instead.

3. List contact(s) with program units and the considerations discussed therein.

Dr. Shien T. Wang

4 Additional information as needed.

3/03

SEP 11 2003