

THE UNIVERSITY OF WISCONSIN-MILWAUKEE  
College of Engineering and Applied Science

FACULTY MEETING

Friday, February 17, 2006 1:30 P.M. EMS E190

AGENDA

**I. ANNOUNCEMENTS**

A. Chancellor Santiago to address the CEAS Faculty

**II. AUTOMATIC CONSENT BUSINESS**

A. Minutes of the December 2, 2005 meeting

B. New Courses and Course Changes -- See Attachment 1

**III. INFORMAL REPORTS**

Office of Student Services	Todd Johnson
Career Services	Juli Pickering
Curriculum Committee	Professor Law
Graduate Program Subcommittee	Professor McRoy
Academic Planning Committee	Professor Horowitz
Faculty Senate	Professor Wang
Graduate Faculty Council	Professor Amano

**IV. UNFINISHED BUSINESS -- None**

**V. NEW BUSINESS**

1. Revision of Structural Engineering Minor -- See Attachment 2
2. Revision of Electrical Engineering Minor -- See Attachment 3
3. Requirement of GRE for Engineering Graduate Programs -- See Attachment 4
4. Proposal for Approval of Research Centers/Laboratories in CEAS -- See Attachment 5
5. Proposed Admission Requirements for CEAS -- See Attachment 6

**VI. GENERAL GOOD AND WELFARE**

**VII. ADJOURNMENT**

John R. Reisel, Secretary  
CEAS Faculty

JRR

## ATTACHMENT 1

### NEW COURSES

- EAS 290 TOPICS IN ENGINEERING AND APPLIED SCIENCE: (SUBTITLE). 1-3 cr., U  
Lectures on new introductory material in engineering and applied science.  
Variable-content course. May be retaken with change in topic.  
Prereq: specified in semester Schedule whenever required for topic.
- ELECENG 300 INTERMEDIATE ANALYTICAL METHODS IN ENGINEERING. 4 cr., U  
Vector algebra. Integration in orthogonal coordinates. Partial differentiation and  
Gradients. Fourier Series. Laplace and Fourier Transforms. Frequency  
Response. Introduction to Convolution.  
Prereq: grade of C or better in ElecEng 234(P).

### COURSE CHANGES

- ELECENG 234 ANALYTICAL METHODS IN ENGINEERING. 4 cr., U  
Mathematical techniques for linear systems. Solutions of ordinary differential  
equations by classical and transform techniques. Elementary aspects of linear  
algebra. Complex Numbers.  
Prereq: grade of C or better in Math 232(P).

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- ELECENG 234 ANALYTICAL METHODS IN ENGINEERING. 4 cr., U  
Mathematical techniques for linear systems. Solutions of ordinary differential  
equations by classical and transform techniques. Elementary aspects of linear  
algebra. Introduction to probability and statistics.  
Prereq: Math 233(P).

**REVISIONS TO STRUCTURAL ENGINEERING MINOR**  
from the Curriculum Committee

The proposed new version of the structural engineering minor will add just one course Civ Eng 579 Earthquake Engineering, and remove the star (\*) from "\*\*This minor ...":

NEW Description:

**Structural Engineering Minor**

The minor in structural engineering is designed specially for students in the following majors: Architecture, Mechanical Engineering, Industrial and Manufacturing Engineering, Materials, Geology, and Physics. This minor is not available to civil engineering majors. The 18-credit minor requires Civ Eng 335, 360, and 372, and one of the following two courses: Civ Eng 571 or 572. Choose any two additional courses from the following list: Civ Eng 401, 431, 456, 463, 502, 560, 566, 571, 572, 573, 574, 578, **579**; and Arch 301, 510, and 516. More information on the minor may be obtained from the Civil Engineering department, 229-5422.

OLD Description:

**Structural Engineering Minor**

The minor in structural engineering is designed specially for students in the following majors: Architecture, Mechanical Engineering, Industrial and Manufacturing Engineering, Materials, Geology, and Physics.  
\*This minor is not available to civil engineering majors. The 18-credit minor requires Civ Eng 335, 360, and 372, and one of the following two courses: Civ Eng 571 or 572. Choose any two additional courses from the following list: Civ Eng 401, 431, 456, 463, 502, 560, 566, 571, 572, 573, 574, 578; and Arch 301, 510, and 516. More information on the minor may be obtained from the Civil Engineering department, 229-5422.

**REVISIONS TO ELECTRICAL ENGINEERING MINOR**  
from the Curriculum Committee

The changes reflect the current EE curriculum:

1. Replace EE 402 by EE 474.
2. Delete CS 438.
3. Replace EE503 by EE574.
4. Add new courses, EE 437, EE462 and EE465.
5. Replace EE 355 by EE595 in the list of core courses.

NEW Description:

Program: The minor in EE will be available to Engineering and Science majors. It will require students to take a minimum of 21 credits of courses and obtain a minimum GPA of 2.0 in the minor. The credits distribution will be as follows:

· Students must take at least 15 credits from the following core courses of the EE:

EE-301, EE-305, EE-310, EE-330, EE-335, EE-354, EE-361, EE-362, EE-367 and EE-595.

· No more than 6 credits from the following list may be counted towards the minor:

EE-410, EE-420, EE-421, EE-429, EE-436, EE-437, EE-451, EE-457, CS-458, CS-459, EE-461, EE-462, EE-465, EE-471, EE-474 (or ME-474), EE-490, CS-536, EE-541, EE-561, EE-562, EE-565, EE-572, EE-574 (or ME-574), EE-575, Matl 481, ME 321.

OLD Description:

Program: The minor in EE will be available to Engineering and Science majors. It will require students to take a minimum of 21 credits of courses and obtain a minimum GPA of 2.0 in the minor. The credits distribution will be as follows:

· Students must take at least 15 credits from the following core courses of the EE:

EE-301, EE-305, EE-310, EE-330, EE-335, EE-354, EE-355, EE-361, EE-362, and EE-367.

· No more than 6 credits from the following list may be counted towards the minor:

EE-402 (or ME-474), EE-410, EE-420, EE-421, EE-429, EE-436, CS-438, EE-451, EE-457, CS-458, CS-459, EE-461, EE-471, EE-490, EE-503, CS-536, EE-541, EE-561, EE-562, EE-565, EE-572, EE-575, Matl 481, ME 321.

## ATTACHMENT 4

### PROPOSAL FOR REQUIRING GRE FOR APPLICANTS TO ENGINEERING GRADUATE PROGRAMS from the GPSC

**Motion:** The Graduate Record Exam (GRE) shall be required for all applicants to the engineering masters and doctoral programs.

**Rationale:** The grade point average (GPA) alone is not a good predictor of student academic success and the GRE requirement has been recommended to CEAS by outside reviewers and the GFC. Recently, the EE Department passed a motion supporting this requirement. The GPSC, at the December 9, 2005 meeting, approved this motion.

**Approval of Research Centers/Laboratories in CEAS**  
Academic Planning Committee  
January 18, 2006

At the campus level, S-10.5 and S-0.5 outline the process used for obtaining approval for establishing a center, institute or laboratory outside the traditional curricular structure. This process is to be followed for all departmental and college research laboratories; instructional laboratories are exempted.

***Definitions of (Academic) Center and Laboratory (S-10.5)***

ACADEMIC CENTER: Generally a programmatic effort associated with a school or college to facilitate the study and dissemination of information in a scholarly area. Frequently, the center is viewed as multidisciplinary or interdisciplinary in nature, bringing together various faculty with an interest in an area of study. Some examples of this are the Center for Twentieth Century Studies and the Center for Latin American Studies.

LABORATORY: This term is associated with an organizational structure that has research as its primary mission. The program may offer occasional seminars but these are secondary to its primary purpose. The Laboratory for Surface Studies is an example of this structure.

Reference by name to centers, institutes, or (non-instructional) laboratories in official documents, brochures, web pages, campus telephone book, business cards, etc., or use of the title "director" requires approval outlined in this document.

***Approval Process***

The campus (S-10.5) requires that an application for a Center or Laboratory include the following:

- a. Proposed name.
- b. Brief description, purpose and justification.
- c. Organizational structure, including the method of appointment and term of office for the director.
- d. List of resources to be committed to the center, including their source.
- e. List of individuals to be associated with the center.
- f. The long-term future and long-range plan for the center.

Once a center or laboratory is approved, any significant changes in the above items must go through the same approval process as the original proposal.

The approval process is described in S-10.5 and S-0.5 (III W):

1. Approval by the Department (if center or laboratory is located within a department.)
2. Approval by the College.
3. Circulate the proposal to all other schools/colleges and allow 30 days for response.
4. Forward proposal to Academic Planning and Budget Committee for review and comment. Send proposal to Faculty Senate for information.
5. Forward the proposal to Provost with evidence that the proposal has been circulated and any objections/comments have been satisfactorily addressed.
6. Obtain approval of Provost and Chancellor.
7. Inform UW System and Board of Regents.

***College Requirements***

In order to receive approval at the college level, the proposal must meet the following requirements:

- a. A center or laboratory shall be inclusive of all faculty with documented interest in the area of the proposed research.
- b. The director shall be appointed by the Department Chair(s) if laboratory or center is located in the Department and the director to be appointed is not the appointer, or by the Dean of the College, otherwise.
- c. The director shall have a fixed renewable term.
- d. The proposal shall include a "sunset" clause, automatically requiring re-approval after a set time.

### ***College Approval Process***

At the college level (Approval step 2 above), the approval process shall consist of the following steps:

- i. The proposal is brought to the Academic Planning Committee, which makes a recommendation.
- ii. The proposal and recommendation (accompanied by a brief rationale) are then brought to the College Faculty for action.
- iii. If approved by the faculty, the proposal is sent to the Dean to be considered for approval.

### ***Criteria for Approval***

The criteria for approval within the College include the following factors:

- The strength of the organizational structure.
- The expected level of effort by participating faculty, researchers, and students.
- The resources (including space) requested by the laboratory or center.
- The scholarly production by the proposers in the area of the proposed research.
- Previous extra-mural funding obtained by the proposers, and the potential for future extra-mural funding.
- The method for determining whether the center or laboratory is successful.

## **Proposed Admission Requirements for Engineering and Applied Science**

### **ADMISSION TO THE COLLEGE OF ENGINEERING & APPLIED SCIENCE**

In addition to the minimum UWM standard requirements, admission to the undergraduate programs in the College of Engineering and Applied Science is dependent upon high school rank (or grade point average) and ACT or SAT scores for those students entering directly from high school, and upon grade point average and level of curriculum completion for transfer students from other colleges or universities. The following admissions criteria are used to place students into Engineering or Computer Science, Pre-Engineering or Pre-Computer Science, and the CEAS Bridge Program.

### **ENGINEERING AND COMPUTER SCIENCE PROGRAM ADMISSION**

#### **Freshman**

Freshmen in the top 33% of their high school class (or a minimum grade point average of 3.33 on a 4.0 scale) and a ACT Math score of at least 26 or a SAT Math score of at least 650, are eligible for admission to the CEAS major of their choice. The final requirement for direct admission to the Engineering program is placement into at least Math 231, Chemistry 105 and English 101 on the required placement examinations. The final requirement for direct admission to the Computer Science program is placement into at least Math 231 and English 101 on the required placement examinations.

#### **Transfer**

For direct admission to the Engineering or Computer Science major as a transfer student, a minimum of 24 college-level credits must have been completed with a minimum 3.00 grade point average. These credits must include the equivalent to Math 232 (with a least a C or better grade) and Chemistry 104 or 105 for Engineering students or CompSci 201 for Computer Science students.

Students who do not meet the minimum requirements for admission directly into the Engineering Program may be admitted to the Pre-Engineering Program.

### **PRE-ENGINEERING AND PRE-COMPUTER SCIENCE PROGRAM ADMISSION**

#### **Freshman**

Freshmen will be admitted to the Pre-Engineering or Pre-Computer Science Program if they ranked in the top 60% of their high school class (or a minimum grade point average of 2.50 on a 4.0 scale) and a minimum of 22 on the Math ACT. In addition, placement into the Pre-Engineering program requires placement into at least Math 116 and English 101.

#### **Transfer**

Transfer students will be admitted to the Pre-Engineering or Pre-Computer Science program if they completed at least 12 credits of college-level work with at least a 2.00. In addition the student must have either transfer credit or placement test results which allows them into at least Math 116 and English 101.

Pre-Engineering students who have completed at least 24 credits required for their intended major, EAS 200 Professional Seminar, Math 232 with a C or better grade, and the English composition requirement may apply to advance into the Engineering major of their choice. Students must also obtain a minimum cumulative grade point average in their required courses as set by the major department.

The purpose of the Pre-Engineering and Pre-Computer Science programs is to permit students who are not qualified for direct entry into the Engineering or Computer Science major the opportunity to enroll in a restricted set of courses that will be applied to their major requirements.

### **CEAS BRIDGE PROGRAM ADMISSION**

Students who meet the standard University admission requirements but do not meet the academic record or placement requirements of the Engineering or Pre-Engineering Programs will be admitted to the CEAS Bridge Program.

Students who were admitted into the CEAS Bridge Program will be reevaluated after taking the required placement examinations. Students who place into at least Math 116 and English 101 will be admitted to the Pre-Engineering or Pre-Computer Science program.