

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

FACULTY MEETING

Friday, March 24, 2017

AGENDA

The March 24, 2017 faculty meeting has been canceled due to a lack of business.

AUTOMATIC CONSENT BUSINESS

- A. Course Changes – See Attachment 1
- B. Advancement to Major Requirements – See Attachment 2

NOTE TO FACULTY:

CEAS Faculty legislation allows for the approval of Automatic Consent Business in the absence of a regularly scheduled faculty meeting. If there is any objection to the above, consideration will be delayed until the next regularly scheduled faculty meeting.

Objections to approval of the above must be received by the Secretary of the CEAS Faculty in writing before 1:30 p.m., Friday, March 24, 2017.

John R. Reisel, Secretary
CEAS Faculty

JRR
Attachment

COURSE CHANGES

BME 101 FUNDAMENTALS OF BIOMEDICAL ENGINEERING, 3 cr., U
A system approach to physiology, cell physiology and transport, major organ systems,cardiovascular system, biomedical signal processing, biomechanics, biomedical engineering design.
Prereq: Math 221(C) or Math 231(C).

had been

BME 101 FUNDAMENTALS OF BIOMEDICAL ENGINEERING, 3 cr., U
A system approach to physiology, cell physiology and transport, major organ systems,cardiovascular system, biomedical signal processing, biomechanics, biomedical engineering design.
Prereq: MechEng 101(C).

BME 320 ENGINEERING AND BIOMEDICAL DEVICES I, 3 cr., U
Physiological and biomechatronic systems, sensors and actuators, signal processing, hearing aid and implants.
Prereq: jr st, BME 101(P), ElecEng 234(P), MechEng 101(C), Physics 210(P).

had been

BME 320 ENGINEERING AND BIOMEDICAL DEVICES I, 3 cr., U
Physiological and biomechatronic systems, sensors and actuators, signal processing, hearing aid and implants.
Prereq: jr st, BME 101(P), ElecEng 234(P), Physics 210(P).

Action **CHANGE**
School/College **College of Engineering & Applied Science**

UW-MILWAUKEE ONLINE PROGRAM CHANGE FORM

I. Current

ADVANCEMENT TO MAJOR REQUIREMENTS FOR ENGINEERING:

For All Engineering Majors:

1. Complete Math 232 (or 222) with C or better grade.
2. Complete EAS 200 (Professional Seminar).
3. Satisfy the GER English composition requirement.

For Biomedical, Civil, Computer, Electrical, Industrial, and Materials Engineering Majors:

4. Complete a minimum of 24 credits required for major. (Excludes: general education, prerequisite, and orientation courses). Consult with an academic advisor for required courses.
5. Obtain a minimum cumulative grade point average in all required math, science, and engineering courses as set by the major department. Currently, the cumulative grade point average has been set at:

2.00 for Biomedical, Industrial and Materials Engineering

2.33 for Civil and Computer Engineering

2.50 for Electrical Engineering

For Mechanical Engineering Majors:

4. Complete MechEng 101 and 110, Chem 105 (or 102), and Physics 209 and 214.
5. Obtain a 2.33 GPA in all required math, science, and engineering courses.

ACCEPTANCE TO THE COMPUTER SCIENCE MAJOR

Pre-Computer Science students may apply for major status with their academic advisor at any time they believe they meet the requirements. Advancement to the major is a graduation requirement. The program may impose major status as a prerequisite for courses numbered 400 or above.

ADVANCEMENT TO MAJOR REQUIREMENTS FOR COMPUTER SCIENCE:

1. Completion of the following courses: Math 231, 232; CompSci 250, 252, 315, 317; and ElecEng 354.
2. Minimum GPA in the above coursework as set by the department.¹
3. Complete EAS 200 (Professional Seminar).
4. Satisfy the GER English composition requirement.

II. Proposed Change Summary

The change will allow students to apply for major status based on their academic performance in first year courses. Emphasis will be placed on the completion of math, science and English prerequisites instead of major courses. It will also require early advising intervention for students who are struggling in basic foundation courses: 1) Major status will be required to register for 200 level courses. 2) A maximum of 3 semester to finish. 3) Limits will be placed on the number of repeats allowed

III. Effects

Additional Faculty Required

Four-Year Faculty Needs

Library Resources

Required Additional Facilities and Equipment

Program Costs

Resource Reallocation

IV. Justification

CEAS is making changes to both admission and advancement to major requirements in an effort to increase overall UWM enrollment. In Fall 2017, CEAS is admitting new students who previously would have been denied admission (In Fall 2016, CEAS denied admission to over 400 freshmen and transfer applicants). These students will be admitted to a "First-Year Program" or "Transfer Transition Program". These are cohort groups which will be provided with additional advising support and career guidance in the first year at UWM. The proposed advancement to major criteria will give the structured curriculum and requirements for these pre-major students.

The goal is to give less prepared students an opportunity to try engineering for a couple of semesters but if not successful to quickly guide them to another less math/science intensive major at UWM before they take too many courses which do not transfer to other majors.

The issue with the current advancement to major requirement is that it doesn't account for the access mission of UWM. The current requirement, which is fairly standard for an ABET accredited program, assumes a new student will place at a high level. But the majority of UWM students need two or three semesters to reach calculus which is the first required course for the program. Currently, over 60% of CEAS juniors have not reached major status. This number would likely become larger if more less-prepared students are admitted. The primary problem with this is for students who do not make it to major status. After attending for three years, many have exhausted most of their resources for attending college. Many leave the university without earning a degree since switching majors at this point is not feasible. By giving students an earlier decision regarding entry to the major, it allows the student to move to another

major at UWM and stay on a path to earn a degree. Career advising will be part of the First-Year program. The intent is to increase UWM retention and graduation even if the student does not continue in CEAS.

FIRST-YEAR ENGINEERING PROGRAM

MATHEMATICS

Math 105 Intermediate Algebra
 Math 115 Precalculus OR
 Math 116/117 College Algebra/Trigonometry
 Math 231 Calculus & Analytic Geometry I

ENGLISH

English 101 Intro to College Writing
 English 102 College Writing & Research

CHEMISTRY

Chem 100 Chemical Science
 Chem 105 General Chemistry for Engineering

ENGINEERING

BME 101 Fundamentals of Biomedical Engineering (BME majors)
 CompSci 250 Intro to Computer Programming (COMPENG majors)
 ElecEng 101 Fundamentals Electrical Engineering (EE majors)
 Ind Eng 111 Intro to Engineering (CE, IE majors)
 Ind Eng 112 Engineering Drawing & CAD (CE, IE majors)
 MechEng 110 Engineering Fundamentals I (ME majors)
 MechEng 111 Engineering Fundamentals II (ME majors)

FIRST-YEAR COMPUTER SCIENCE PROGRAM

MATHEMATICS

Math 105 Intermediate Algebra
 Math 211 Survey of Calculus & Analytic Geometry

ENGLISH

Eng 101 Intro to College Writing
 Eng 102 College Writing & Research

COMPUTER SCIENCE

CompSci 250 Intro to Computer Programming
 CompSci 251 Intermediate Computer Programming

V. New Copy

ADVANCEMENT TO MAJOR REQUIREMENTS

Students admitted to the First-Year Program or Transfer Transition Program may apply for major status with their academic advisor at any time they believe they meet the requirements. The program may impose major status as a prerequisite for courses numbered 200 or above.

Engineering

- 1) Complete Math 221 or 231 with a C or better grade.
- 2) Complete GER Oral and Written Communication Part A.
- 3) Placement into Chem 102 or 105
- 4) Obtain a minimum grade point as set by the major department each year. A 3.00 GPA guarantees admission to any CEAS major.

Computer Science

- 1) Complete Math 211, 213, 221 or 231 with a C or better grade.
- 2) Complete GER Oral and Written Communication Part A.
- 3) Complete CompSci 251 with C of better grade.
- 4) Obtain a minimum grade point as set by the major department each year. A 3.00 GPA guarantees admission to any CEAS major.

Courses required for advancement to major may be repeated only once. No more than two courses required for advancement to major (Pre-calculus math, Calculus I, Chem 100, English 101 and 102, CompSci 250 and 251) may be repeated

First-Year students have a maximum of three semesters to complete advancement to major requirements. Part-time students may be granted an extension by their academic advisor.

Transfer Transition students have a maximum of two semesters to complete the advancement to major requirements. Part-time students may be granted an extension by their academic advisor.

ATTACHMENT 2

VI. Proposed Effective Date **Fall 2017**

VII. Comment

VIII. Approval

Vice Chancellor's Signature _____

Date _____