

COLLEGE OF ENGINEERING FACULTY ORGANIZATION (CEFO)

MEETING MINUTES

Tuesday, May 9, 2023, 11:30AM

Lunch available at 11:30AM

DUKE 345

The following individuals signed the attendance sheet:

Sid Alvis, Yamilka Baez-Rivera, Cathy Blat, Anthony Bombik, Valentina Cecchi, Youxing Chen, Harish Cherukuri, Michelle Demers, Gretchen Dietz, Abasifreke Ebong, Terence Fagan, Ahmed El-Ghannam, Kosta Falaggis, Austin Fifield, Wei Gao, Gwendolyn Gill, Christopher Green, Courtney Green, Meg Harkins, Simon Hsiang, Olya Keen, Rob Keynton, Jeff Kimble, Christoph Kossack, Dan Latta, Kevin Lawton, Churlzu Lim, Kevin Lindsay, Chris McDaniel, Edward Morse, Brigid Mullany, Sherman Mumford, Mariya Munir, David Newell, Thomas Nicholas, Maciej Noras, Asis Nasipuri, John Nettles, Jose Outeiro, Stephanie Pilkington, Praveen Ramaprabhu, Jeff Raquet, Brenda Parker, William Saunders, Ali Sears, Sam Shue, Ron Smelser, Stuart Smith, Kamia Smith, Jake Smithwick, Tyler Stover, Brett Tempest, Mesbah Uddin, Kimberly Warren, Erika Weber, Qiuming Wei, Matthew Whelan, Terry Xu, Yong Zhang, Nigel Zheng

(60 Attendees)

AGENDA:

1. Welcome and short remarks from CEFO President Aidan Browne

Aidan Browne called the meeting to order at 11:31AM and introduced the agenda.

2. Announcement of Election Results

Election results were emailed. Corrections and notes:

- The initial election of University Honors Council position was invalidated because only members of the Honors Faculty are eligible to vote for members of the Honors Council. The election for this specific position was held again with only members of the Honors Faculty.
- First runner-up to the University Faculty Council representative positions will automatically become the alternate for the position.

3. College/Program Admission Requirements

Aidan Browne reviewed the stated admission requirements for other engineering programs in North Carolina (NC State, ECU, NC A&T, and Western Carolina). Other colleges in the state are using a model of “competitive admission” process, where they only publish the typical profile of an admitted student and do not specify any fixed admission requirements or criteria beyond general University admission requirements. One option for implementation of a competitive admission process would be to provide criteria to admissions and they send to the College only the applicants not meeting the criteria for additional review. Alternatively, the College can receive all of the applications and determine admission for every student. Concern was raised about the timing and the additional workload that might be required to determine admission criteria each year. Concern was also raised about how we maintain a record of the criteria that we use internally to determine admissions each year. It will also

be necessary to have the infrastructure in place to make sure that we are properly advising incoming students to make sure that they have adequate preparation to be successful in their first year courses.

A motion was made to approve the proposal to remove the current admission requirements and adopt a competitive admission requirement. The motion was approved by vote of the faculty present with a single vote in opposition of the motion.

4. Common First Year

Aidan reintroduced the drivers behind an initiative to develop the framework for a common first year curriculum for the LCOE. The focus of a task force has been to identify key knowledge, skillsets, and topics that need to be universally covered in all engineering programs in the first year to set the students on a path to success and prepare them to be more competitive in the workforce. A strawman curriculum developed by the task force for the potential common first year was presented. Resources will be made available to deliver the new courses if the college adopts the curriculum and the Dean has committed to requesting an increase in the credit hours associated with our degree programs. Additionally, alternative pathways for students with different levels of preparation in mathematics prerequisites was presented to demonstrate that the common first year strawman curriculum could be adapted to students that are prepared to take MATH-1241 Calculus I or that need to start with either MATH-1103 Precalculus for Science and Engineering or MATH-1100 College Algebra.

The floor was opened to discussion:

- Project timeline on draft syllabi for the proposed new courses: these syllabi could be developed over the summer and presented to CEFO at the beginning of the 2023-2024 academic year.
- Will the assumption be 120 or 126 credit hours and what do we do if the increase in credit hours is not approved? Dean Keynton provided assurances that he will be pushing for the increase in the credit hour requirement for our program.
- Concern was raised regarding the challenge of clearly explaining the difference between engineering and engineering technology in the proposed Exploring Engineering & Technology course.
- Concern was raised about motivating students in logic and programming in a general engineering environment rather than in a course that is specific to a department with examples tailored specific to the discipline. It was noted that the envisioned Logic and Programming course would use practical examples from the different disciplines to demonstrate relevance to each major and to engage the students in the material.
- Concern was raised about the difficulty of the pathway presented for students that would start with MATH-1100 College Algebra and use the summer terms to catch up on Calculus I, Calculus II, and Physics I. It was agreed that this pathway is unrealistic and that any student that needs to take College Algebra should be encouraged to complete MATH-1100 in the Summer II term prior to their first year of study.
- A recommendation was made to design the proposed Foundations of Mathematics for Engineers in a way that it could eliminate the need to take a course in statistics and probability, especially given our credit hour restrictions.
- It was noted that spatial visualization is a skill that has been lost and one that our students struggle with because they no longer are exposed to descriptive geometry and drawing.
- Concern was raised about the projected timeline, which would introduce the curriculum in Fall 2024. The ability for the programs to revise their curriculum around the common first year is dependent on the topical coverage (depth and breadth) covered in the first year courses, which

has not be established yet. Concern was also raised about the need to clearly and accurately communicate with prospective students about the curriculum. Dean Keynton encourage the faculty to support moving forward with the current timeline and proposed establishing a checkpoint in August to determine if the timeline is feasible or not after we have expended sufficient effort trying to make the effort successful on the proposed timeline.

- Concern was raised that the easiest way to remove credits from the rest of each program is to eliminate technical electives, but that negatively impacts the ability of our students to develop specialized knowledge that prepares them for unique opportunities in the workforce. A similar concern was raised about the ability of programs to maintain undergraduate concentrations.
- A recommendation was made to map the retention and elimination of information that is currently being delivered by courses such as ENGR-1201 and ENGR-1202 as the new courses are developed.
- It was noted that a common first year curriculum would be much easier for community colleges to support.
- A recommendation was made to consider reducing Logic and Computational Problem Solving and Foundations of Mathematics for Engineers each from 3 to 2 credit hours as a means of addressing credit hour limitations.
- It was noted that there needs to be strong communication between the special task force working on framing the common first year curriculum and faculty from the individual departments that will be tasked with revising program curriculum to accommodate the common first year.
- A motion was made to recommend that the CEFO and other organizations pursue the framework as shown in concept to be further developed, including functional syllabi, and revisited at the end of the summer. The motion was seconded. Discussion was held on the motion. The specific motion was prepared as: “The faculty endorse to continue to work on the presented framework, each program will evaluate their program’s changes needed, and present and report back to the faculty in August 2023.” The motion carried with no votes in opposition and three abstentions.

5. Closing

Meeting ended at 1:02 PM.

Proposed Change in LCoE First Year Admission Criteria

Based on the current increasingly competitive environment in North Carolina for attracting engineering students, an analysis was done to compare admissions criteria for Colleges/Schools of Engineering. UNC Charlotte remains the only school to maintain criteria above and beyond the general university admission requirements, everyone else just states that they are “competitive”. A number of the other schools do publish their “typical” or “average” profile for their previously admitted first year class. Below is a proposal to remove our requirements to come in line with our competition, and hopefully increase our application pool and yield. Our admission process would become a competitive process, where we choose the most competitive students that apply in any given year.

The admission process will become: evaluating the pool of applicants for each major (CEGR, CPGR, EEGR, MEGR, SEGR, ENGR, BSET) and accepting the top x candidates in each sub-pool, where x is set independently by each program. OSDS will manage the implementation of the process, and the CEFO Undergraduate Academic Committee (CEUAC) will oversee. On a periodic basis, CEUAC will report to the Faculty the typical profile of students admitted for that year. Each year the Engineering website will be updated with the average/typical profile of that year’s admitted students.

The CEUAC will also continue to oversee the sophomore progression requirements, which will remain unchanged.

PROPOSAL (which strikes the blacklined text, and leaves the rest unchanged):

Admission Requirements

First-Year Students

First-Year admission is competitive. Based upon an overall evaluation of high school record with particular emphasis on advanced courses in math and science and SAT or ACT scores, First-Year students may be admitted directly to an engineering major or as engineering undecided.

- See University Admission Requirements
- ~~Minimum GPA: n/a~~
- ~~Pre-Major/Prerequisite Courses: First-Year students MUST present a pre-calculus equivalent course, a math course during the high school Senior year (grade 12/13) or math intensive science course such as physics or chemistry if no math courses are available, with no grades below C in any math courses. Students with AP test scores of at least 3 on AP Calculus AB or BC or early college high school students who present transfer credit for calculus equivalent to MATH 1241 or higher are exempted from having a math course in the Senior year.~~
 - ~~Minimum SAT Math score of 570 or ACT Math subscore of 23~~
 - ~~Declaration of Major: Students may declare the major at time of admission or at any time if in good standing with the College and University.~~

Progression Requirements

First-Year Requirements

All new First-Year students, early college students, and transfer students with only one semester at another institution are initially advised by a central office within the College of Engineering. Students must satisfy the following requirements in order to progress in the curriculum and matriculate to their major department.

- Follow the advice and recommendations of their faculty advisors.
- Follow all prerequisite, corequisite, and progression requirements of their program.
- Earn at least a 2.00 GPA in the first semester.
- Complete all core courses in the First-Year curriculum with grades of C or above. Core courses include: MATH 1241 and MATH 1242, PHYS 2101; CHEM 1251 or MEGR 1100 (MEGR majors); MATH 2164 and ECGR 2103 (CPGR/EEGR Majors); MATH 2164 (SEGR Majors).
- Pass all courses within two attempts, including withdrawing from a course with a grade of W.
- Complete the First-Year curriculum within four regular semesters.
- Earn a 2.50 cumulative GPA upon completion of the First-Year curriculum.

Sophomore Through Senior Year Requirements

- Maintain an overall GPA of 2.00 in the University.
- Maintain a major cumulative GPA of 2.00 for all courses in the departmental curriculum. Failure to meet this requirement for two consecutive semesters will result in not being permitted to enroll in College of Engineering courses.
- Take courses in the curriculum a maximum of two times to achieve a satisfactory grade, including withdrawing from the course with a grade of W.

An undergraduate student who fails to satisfy one or more of the progression requirements stated above, but who nonetheless meets the conditions for continued enrollment in the University, will be ineligible to re-enroll in the College of Engineering unless an appeal is accepted by the College of Engineering. If an appeal is accepted, requirements for continued enrollment appropriate to the individual situation are specified in a "Continuation Agreement" that is mutually agreed upon and signed by the student and their appropriate advisor.

A student who has been suspended by the University must follow University guidelines for appeal. Re-admission to the College of Engineering after a University suspension is not automatic. An application for re-admission must be made by the student and approved by the College/department. Students who are re-admitted by the College of Engineering after suspension by the University must meet requirements for continued enrollment appropriate to their individual situation. These requirements are specified in a "Continuation Agreement" that is mutually agreed upon and signed by the student and their appropriate advisor. The consequences of failure to meet the requirements of the agreement may be articulated in the agreement itself. However, if these consequences are not included in the agreement, failure to meet the requirements will automatically result in the student not being permitted to continue to enroll in College of Engineering courses.