

Subject: F W: Update on the BE Curriculum and Major to be discussed in next Faculty Meeting

From: "Campanella, Osvaldo H." <campa@purdue.edu>

Date: Fri, 24 Feb 2012 11:28:49 -0500

To: "Cipra, Raymond J" <cipra@purdue.edu>

Hi Ray

This is the email I sent the ABE faculty a few minutes ago

Best regards

-----Original Message-----

From: Campanella, Osvaldo H.

Sent: Friday, February 24, 2012 11:27 AM

To: 'abefaculty@ecn.purdue.edu'

Subject: Update on the BE Curriculum and Major to be discussed in next Faculty Meeting

I am sending a summary on the status of our three proposed majors and potential effects on our BE curriculum.

As you know our proposal has been flagged by Chemical Engineering due to several reasons, some of them have been solved but still there are serious issues concerning the approval of these majors. A few weeks ago the chair of the ECC committee and I discussed the possibility of inviting faculty from ABE, ChE, and BME to attend one of the ECC meetings to discuss all these issues and concerns. Instead it was preferred to discuss all these issues internally in the ECC committee before inviting representative of these three departments.

The message I got from the ECC meeting is that our proposal to have these three majors will not be favorable, and if we go for a second EFD and vote, the result probably will not be positive. Chemical Engineering has already flagged our current document, and although BME accepted it before, many faculty in this department are not happy with our proposed majors and probably its representative will not vote positive if we submit a new EFD document

One of the issues in the ChE flag is concerning teaching ChE 377 (4cr) and ChE 378 (4cr) to our BE students. That issue has been temporarily solved among the BE faculty in our department because we are planning to teach equivalent courses to those two courses. The solution will be permanent once we have those two new ABE courses approved and the Biological Engineering group is working to solve this problem. Steps are (1) to have the course equivalent to ChE 377 approved by both schools this semester to be able to teach the course in the Fall 2012 semester. (2) To have the course equivalent to ChE 378 approved by both schools in the Fall 2012 semester to teach it in the Spring 2013. (3) In addition we would like to propose a laboratory course (3cr), that will have to be approved by both schools. The idea of introducing the lab course is not because we are not having enough engineering credits. The BE program has more than enough engineering credits (54 and 48 needed). Changing from ChE courses to ABE 3 credit versions is therefore OK. The issue here is continuing to provide lab experiences for our students.

Both ChE 377 and CHE 378 are 4 credit courses because have a laboratory component (the lack of lab space is the main reason why ChE is reluctant to teach those courses to our students in the near future). At the moment we do not have a laboratory component for our intended equivalent courses so they will be offered as 3 credits courses. ABE 454 is a 4 credits course taken by Juniors in the BE program. It was agreed in the last meeting held by the Biological Engineering faculty at ABE, the possibility of changing ABE 454 to a 3 credits course, and move the one credit to the lab class, the lab class therefore will have 3 credits. In addition we have to create a set of laboratories, have a course outline, etc, and have it approved it as soon as possible by both schools.

As I said before the issues concerning the majors has not been solved, and based on the last meeting I presume that will be voted negative or flag it again in the event

of a new EFD submission.

In the last ECC meeting we had an extensive and very productive discussion in which all were trying to help to have this issue solved.

The conclusion from the ECC meeting is that for the College of Engineering the word major means a program and everyone in the committee believe that what we call "Majors" should be called "Areas of Specialization". If those "Majors" are called "Areas of Specialization", the problem is solved, because we do not even have to go through the route of ECC and College of Engineering approval. As a matter of fact I was looking at the web sites of some of the Engineering departments and all have one program but several Areas of Specialization. To give you an idea of the information posted on the web, below is what I found in Chemical Engineering.

"As a chemical engineer, you can work in product development, process design, management, quality control, pollution control, marketing, technical sales, or other areas.

Chemical products:

- * Petrochemical industry
- * Biochemical and biomedical
- * Polymer materials
- * Renewable resources engineering
- * Reaction engineering and catalysis
- * New/alternative energy

Consumer products:

- * Food and nutritional products
- * Environmental engineering
- * Process systems engineering
- * Risk management
- * Personal care products
- * Microelectronics and personal electronics

Pharmaceutical industry:

- * Particle technology
- * Gene therapy
- * Tissue engineering
- * Biological materials
- * Drug discovery
- * Drug delivery
- * Drug manufacturing
- * Management/business
- * Transport phenomena
- * Separation processes

As you can see ChE includes many areas, some of them very close to ours but since they are including them as Areas of specialization, there is no conflict.

What needs to be discussed by us is whether we are comfortable to call our proposed "Majors" with the words "Areas of Specialization. If we go for that route we will be avoiding more conflicts with that.

However still there are several issues:

Our curriculum also has to be approved by the Ag School, which uses the word "majors" in a different way.

Currently in the Ag School website we have two "majors" listed as "Agricultural Engineering" and "Biological and Food Processing Engineering". If we move to have degrees/majors in Agricultural Engineering and Biological Engineering in the Ag School with Areas of Specialization (or Areas of Concentration as they named in the Ag School) we would be losing Biological and Food Process Engineering as one of the "majors". Dr Engel talked with Al Goecker about this problem. His suggestion is to act on a document to create concentrations under Biological Engineering and submit with a short explanation as to why the change from the majors we had proposed to concentrations. He indicated we can leave the other majors in place if we choose - he wasn't concerned about this mixed use of major and concentrations even under the BE degree.

There is another issue that may affect our future ABET review and it is related to the different number of credits for each Major/Area of Specialization.

The potential questions from an ABET review are: (1) What is the minimum requirement to graduate in Biological Engineering in our program? (2) What happens if one student does not choose any of our majors/areas of specializations or it is not completing the one selected?

I believe this a fairly complete summary of our curriculum issues and Dr Engel informed that we will be seeing a document to act on this at the next faculty meeting. As you can see we have several urgencies to have our proposed curriculum and Areas of Specialization in place this and next semester.

Best Regards

Oswaldo Campanella