

MEMORANDUM

To: Prof. Timothy Folta, University Senate Steering Committee Chair; Prof. Teri Reed-Rhoads, University Senate Educational Policy Committee

From: Prof. William Crossley, Senator from Aeronautics and Astronautics (crossley@purdue.edu)

Date: January 6, 2012

Subject: Feedback from Aeronautics and Astronautics faculty regarding the Undergraduate Core Curriculum as described in University Senate Document 11-7

CC: Prof. Morris Levy, University Senate Chair; Aeronautics and Astronautics Faculty

In late November, the faculty in the School of Aeronautics and Astronautics held a meeting solely to discuss the core curriculum. As the senator for Aeronautics and Astronautics, I gathered comments and feedback from colleagues both at the meeting and after the meeting, allowing for iteration on this document through January 6, 2012. I am providing this to the University Senate Steering Committee and Educational Policy Committee.

Summary

The Aeronautics and Astronautics faculty are supportive of making it easier for undergraduates to change majors / degree during their first several semesters at Purdue and that the concepts behind the “foundational level” of the core curriculum are acceptable, but that there needs to be additional detail included about courses in the foundational level.

The faculty in Aeronautics and Astronautics are very unhappy about the “embedded outcomes” concepts presented in the document. The consensus is that the embedded outcomes, as presented, do not improve the experience of our students and that the administration and oversight of this would be expensive and time consuming.

Comments recorded and paraphrased during the meeting and / or provided to me after the meeting

The concepts behind the “foundational level” seem well presented, with the important exception that no example courses are provided in the table of the “Foundational Outcomes”. Without any examples, it is difficult to discern what kinds of courses the committee has in mind. The discussion later in the Document 11-7 says that the committee identified some courses meeting foundational outcomes. These should appear in the document.

The “embedded outcomes” far exceeds the original notion of a core curriculum that facilitates change of major / degree objective.

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The “embedded learning outcomes” presents concepts that individual faculty would need to implement in courses – but a vaguely-described oversight committee would appear to have final approval of the course content. Who has time and / or financial resources for this?

It appears that instructors will not only have to develop the content of their course, but they will also need to develop content that meets “embedded outcomes” defined by an external committee. For instance, would a fluid mechanics course need to contain “intercultural knowledge”?

It is unclear who would be responsible for tracking whether students demonstrate “level 3” outcomes. Is this done as part of the course? Is it possible that we should fail a student for not demonstrating these outcomes? How does a faculty member measure the level of proficiency the students have obtained?

The proposal has vague and worrisome intimations of one or more large committees to oversee outcomes testing. The proposal has vague and worrisome intimations of faculty filling out rubrics of a dozen or more performance measures for the hundreds of students we teach every year. Where will the time for this onerous campus-wide effort come from? This proposal is based on assumptions that money and faculty time are boundless resources.

The proposal for “embedded outcomes” levies additional reporting and educational requirements on our program. The feedback mechanism and precise satisfaction of levels for the embedded outcomes is unclear.

The Accreditation Board for Engineering and Technology regularly reviews our curriculum to help insure that we are providing our students with an appropriate educational experience and foundation to be aerospace engineers. Is this current process not sufficient in ensuring that students in Aeronautics and Astronautics are obtaining the proper “embedded outcomes”? Should the “embedded outcomes” for students in one academic unit really be the same for students in other academic units? Is not that the point of having separate academic units?

We see a risk of further centralization of authority, which we oppose. The University is made up of separate Colleges and Schools because we serve different groups of students seeking different kinds of educations in order to work in different fields with different expectations and standards. Centralization and the imposition of some kind of uniform standards risks the addition of expensive and hobbling bureaucracy that is counterproductive. Any new 'core curriculum' must be carefully designed and implemented to minimize these kinds of negative outcomes.