

REPORT TO THE UNIVERSITY FACULTY COUNCIL BY THE COE FACULTY COUNCIL REPRESENTATIVES

College of Engineering Faculty Forum on the Final Report of the Task Force on Curricular Reform

Faculty Council Representatives from the COE

Desiderio Kovar, Associate Professor and COE Forum Convener, Mechanical Engineering
Archie L. Holmes Jr., Associate Professor, Electrical and Computer Engineering
James O. Jirsa, Professor, Civil Engineering
Desmond F. Lawler, Professor, Civil Engineering
Glenn Y. Masada, Professor, Mechanical Engineering
Kenneth M. Ralls, Professor, Mechanical Engineering
Christine E. Schmidt, Professor, Biomedical Engineering
Stanislav Emelianov, Assistant Professor, Biomedical Engineering

Format for COE Faculty Forum

Prior to meeting for a college-wide forum, all department chairs complied with a request to convene a meeting of faculty members from their own departments to discuss the Task Force report. The format for these discussions was intentionally left open to enable each department to structure the meeting in a manner that would allow for maximum input from individual faculty members. The decision as to whether Task Force members were to be invited to the departmental meetings was left to the department chairs. The department chairs were asked to provide a written report summarizing their department's discussions. Total attendance at these meetings was approximately 75% of the faculty in the College of Engineering (COE). On the pages that follow, a summary of the discussions that took place in these departmental forums is presented.

Following the departmental meetings, a college-wide faculty forum was held on February 23, 2006. More than 50 COE faculty and guests were in attendance. Several Task Force members (Archie Holmes, Desmond Lawler, Brent Iverson, and Paul Woodruff) were present. The forum commenced with a brief introduction by Desiderio Kovar followed by a summary of the departmental forums presented by David Dolling, Associate Dean for Academic Affairs. Desmond Lawler then provided a summary of the task force report and a rebuttal to some of the comments in the departmental reports. The remainder of the meeting was an open discussion of the Task Force Report. The majority of this discussion was taken up by faculty asking for clarifications to the report and Task Force members answering these questions. Few new opinions were expressed. Thus, the primary basis for most of the feedback provided in this report were the summaries of departmental forums, but for completeness, the minutes of the COE faculty forum are provided in an appendix.

Summary of Departmental Reports

With a recognition that any classification scheme that attempts to summarize the diverse views of large body will likely not capture the views of every individual, we have organized our thoughts into three broad categories that attempt to capture the views of the majority of the COE faculty: 1) Areas of consensus support for the Task Force recommendations, 2) Areas of support for the Task Force recommendations, with some reservations and 3) Areas of strong opposition to the Task Force recommendations. Where possible and where applicable, we have also provided alternative recommendations.

1. Areas of Consensus Support for Task Force Report:

Goals of Task Force

Faculty overwhelmingly supported the goals of the Task Force including improving the educational experience of undergraduates, directing increased resources toward undergraduate education, and improving students' ability to find their way.

Strands

The concept of "strands" with associated research and internship opportunities, found widespread support. It was noted by several departments that a system of strands currently is in place in Engineering and works well. It was felt that the proposal for more emphasis on faculty input into strands, and the resulting broadening of the strands to new areas, would be beneficial to both engineering and non-engineering students.

Flags

The faculty supported both the concept and implementation of "Flags" proposed by the task force.

2. Areas of Support for Task Force Report, with Reservations

Signature Courses

There was general consensus that Signature Courses could offer some benefits. Indeed, several faculty expressed an interest in teaching a Signature Course. However, many faculty questioned whether the benefits of this recommendation were outweighed by potential negative impacts. A number of specific areas of concern are listed below.

- There was a general concern about "the effectiveness of teaching such a course in large sections to such a diverse audience. Our freshmen students often complain about large sections as being very impersonal."
- The existing engineering "curriculum is packed with necessary technical content and already contains a great deal of study of nature and science. Our students struggle to graduate in 4 years and this added course will not help."
- The Freshmen Signature Course is likely to increase the time to graduate for engineering students since it adds an additional course to the existing curriculum.

- "...the Task Force Committee suggested that some of the core courses be team taught by teachers from different areas. Our experience with this approach to teaching is generally not positive. Course structure and cohesion between the various instructors is usually lacking."

Signature Sophomore Course-Culture

The faculty had fewer concerns about this course. Specific issues that were raised are:

- Details about the course were lacking
- Concerns were raised about this course becoming a "watered-down" survey course.
- Some faculty felt that the goal of this course would be better met by allowing the students to have a small menu of courses to meet this requirement.

General Comments Related to Both the Freshmen and Sophomore Signature Courses.

- Concerns were raised about the substantial cost of the Signature Courses and where the resources would come from. Some faculty expressed skepticism about the ability to raise from donors the level of funding that would be required to sustain these recommendations.
- There was widespread skepticism that the TAs could be adequately trained to be effective teachers in multi-disciplinary courses such as these.
- Many students transfer from Texas community colleges or other universities and it is not clear how the proposals in the report would impact them.

Alternatives Recommendation for Signature Courses

Although not widely expressed, some faculty questioned the need for two Signature Courses. These faculty argued that targeted Signature Courses could be developed for students from particular colleges or areas. For example natural science and engineering students already have sufficient quantitative reasoning in their curriculum and therefore this aspect of the proposed Signature Course would duplicate the existing core for these students. However, some felt that these students would benefit from a course that included more cultural and writing elements. Likewise students from other majors may already have a writing or multicultural theme as part of their curriculum and including this in the Signature course would be redundant. By minimizing duplication in the core curriculum, we would be better able to direct our limited resources towards the Commission of 125's goal of "equipping our students with a core body of knowledge essential to well-balanced education."

3. Areas of Strong Opposition to the Recommendations of the Task Force Report

Three sets of recommendations that drew widespread criticism from the COE faculty are highlighted below. Faculty generally supported David Hillis' alternative recommendations for these three proposed changes.

Enhancing Students' Ability to Find Their Way.

There was considerable skepticism that University-wide advising would serve students better than the current College-centered advising system. Many faculty felt that improvements to the existing system would be a more effective means of achieving the goal of improving advising. Faculty felt that centralizing the advising process would lead to an impersonal process at a University the size of UT. There was also wide-spread opposition to the 'preadmission' proposal. Engineering students are typically very anxious to get started in their selected fields and they quickly identify with their cohorts. The faculty felt that the perception that engineering students would not be in the engineering college from the start would put the College at a distinct disadvantage to recruiting students. Specific comments are highlighted below.

- We are "...not convinced that a University-wide advising system would be particularly useful. It is hard to imagine an advisor outside of the specific discipline being able to provide the necessary information about, not just that discipline, but dozens of others."
- "The counseling proposed by the University College will most likely not change the fact that students are not finding their way. What difference does it make if a student enters the University (1) in a major he thinks he/she likes and then changes to a major he/she thinks he/she likes better, (2) and is assigned to a major for accounting purposes and then switches to a different major, (3) enters UT as an undecided and then changes to a named major. In all cases there is a change, regardless of what you call it."
- We have made great strides in creating a small community within a very large university. Centralized advising would seriously hamper our efforts to continue this.
- "This recommendation could adversely affect recruiting of top students, who will simply opt to go to other engineering programs at top universities if they are not allowed to declare Engineering as freshmen."

University College.

The faculty were strongly opposed to the creation of the University College. In particular, concerns were raised about the University College adversely impacting the connection between students and the Department/College during the first year (with resulting recruitment and retention consequences) and about the financial implications of a new college. Some of these sentiments are highlighted below.

- "Entering freshmen suffer from a lack of identity in a large university. This recommendation goes exactly counter to what is needed. Engineering creates a small community within a large university. An extra layer of administrative structure does not

have any perceived benefit to the faculty. There was some support for the concept of a home for students who do not know what they want to major in, but not for students that have a clear career goal and want to get into it right away. Most engineering students are really excited to be embarking on what they want to do with their lives and this creates a strong bond with other engineering students.”

- “Perhaps no recommendation in the report created as much discussion as the creation of a University College. The faculty (from our department) unanimously thought that this was an unnecessary bureaucracy that would create wasteful administrative burdens on the faculty and staff and a large financial burden on the University. The major functions of the University College are to provide advising to students in their freshman year and to act as guardian of the core curriculum. As discussed earlier, we feel that advising is best handled by departments and colleges. We also believe that the Provost’s office is already well-suited to handle the organization of the signature courses and core curriculum. Thus, there appears no need to create the University College.”

Increased Resources

Faculty generally found David Hillis’ alternative proposal to be more persuasive than those presented in the Task Force Report. Some specific comments are highlighted below.

- “The proposed University College will require significant resources. If there is a will to secure such a large new source of funds, it seems that it would make a more significant and predictable impact by hiring more faculty and reducing the student-faculty ratio, and focusing on undergraduate research experiences.”
- “The resources required to implement these recommendations appear out of scale to their benefits. There appear to be better uses for resources of this magnitude including reducing student faculty ratio.”
- The faculty fully supports increased resources for teaching undergraduate students. However, the estimated \$10-15 million required annually for the University College was not considered money well spent and that there were more pressing financial issues facing the university, such as reducing the faculty to student ratio, increased support for teaching assistants, and maintenance and improvement of the teaching infrastructure. Moreover, if the annual operating cost for the University College is to come out of the proceeds of donated endowments, more than \$300 million must be raised.

Appendix
Minutes of the College of Engineering Faculty Forum on Core Curriculum
Task Force Report
February 23, 2006

Approximately 50 people were in attendance. That number included faculty from the Task Force and observers from the Faculty Council.

Introduction by Desiderio Kovar

Associate Professor Mechanical Engineering, College of Engineering Faculty Council Representative

The curriculum change was initiated by the Commission of 125. A recommendation released by the Commission was to “develop a new undergraduate core curriculum to better prepare students for lives of accomplishment”

In December 2004, President Faulkner convened a task force to look at the core curriculum reform. Consisted of 18 faculty and 2 students.

October 2005, task force releases final report

Spring 2006, input from the University community is sought

Five recommendations came out of the task force’s work:

1. Creation of freshman and sophomore Signature Courses
2. Integrated and Coherent Core Courses
3. Enhancing Students’ Ability to Find Their Way
4. Creation of University College
5. Increased Resources for Core

Summary of Department Reports by David Dolling

Associate Dean for Academic Affairs

What are the views of the College of Engineering on the Task Force Report? The College of Engineering followed a three step process:

Step 1: Departments held their own faculty forums and responded to the Dean’s Office with written reports

Step 2: The College of Engineering held a college-wide faculty forum

Step 3: The view of the College of Engineering will be presented to the University Faculty Council

David Dolling showed a chart listing the five recommendations and whether the departments supported each one. Generally most departments supported the signature course and coherent core course recommendations. Almost all departments did not support the enhancing students’ ability and University College recommendations.

David Dolling then summarized the general tone of the departmental reports as they related to each Task Force recommendation. He tried to pick comments/themes common to 3, 4 or more departments.

Summary of Task Force by Desmond Lawler

Professor, Civil, Architectural and Environmental Engineering, Core Curriculum Task Force member

He indicated he would try to respond to the concerns raised by Dr. Dolling, from the departmental reports.

- He believes there should be an experience that all students share
- After 25 years, the curriculum needs refreshing.

University College-faculty side

- there needs to be a “guardian” of the core curriculum—some entity to worry about the core curriculum.
- to ensure the goals of the reform are carried out and the curriculum does not stagnate
- all faculty would be members of the University College (UC)
- the dean of the UC will be able to recommend hiring of additional faculty that participate in core courses
- dean, executive committee, small administrative staff to provide oversight

Advising

- the idea was that additional counseling services would supplement what the colleges and schools are already doing.

Change from natural science elective to science and technology elective beneficial so that engineering faculty could participate in the UC

Quantitative reasoning – for example, our statistics courses could be offered to all university freshmen .

Can be a tool to recruit freshmen (the 20% not pre-admitted) instead of losing them

Dispelling Myths

- at most, students would take one more course
- in terms of limiting AP and transfer credit: a lot of universities are considering this. It may raise the standards of our students (i.e., taking an English writing course) instead of having them place out.
- intent of the Task Force was not to wipe out anything we are currently doing, only to supplement
- thought broader advising could help retention numbers
- Lawler showed a slide with only guesstimate of numbers that with the number of students and number of courses that students “lose” when they transfer majors (courses taken that don’t count towards degree), it is \$10M in resources lost

Desi Kovar took the floor again for the discussion

Discussion

Bill Rossen – regarding money wasted from taking extra courses that don't count towards degree – any class used to “explore” major is money wasted

Lawler – why he thinks the additional advising will help lower the number of courses taken (by putting students in the right place to lower transfers)

Format for Feedback (as recommended by Faculty Council)

Pros

Cons

Alternative recommendations/suggestions

Questions/Issues/Areas where additional information is needed

1. Signature Courses

A. Freshman Sign. Course: Inquiry Across Disciplines: Nature

--does not replace anything; is in addition

--using writing courses as part of 42 hours

Ben Hodges – who decides the TA issues? Lawler – this issue was not really addressed by the Task Force.

Dave Allen – what did the Task Force envision for this signature course? What is the format? 3 course taught by different faculty? The same course?

Paul Woodruff – can only teach them in large sections, top faculty teaching what they know, to create common knowledge

Yale Patt – can't see how you can call that a shared experience then if they aren't all taking the same course

Joe Beaman – change ME to \sqrt and X on Dolling's chart; they applaud the reason for all of this, but have lots of concerns

B. Sophomore Sign. Course: Inquiry Across Disciplines: Culture

--not an additional course

need to have the flexibility to have this course in the sophomore/junior/senior year to get started on math/engineering requirements

what about transfer students? Entering as juniors, will they bypass this requirement?

Archie Holmes, College rep on the Task Force, he said that if the scenario of a student takes 2 years at a community college and transfers into engineering, then they would not take this course, but he believed most transfer students are not that type.

Al Meyer – actually 1/3 of engineering transfer students started outside UT

Ben Hodges – most students do not find the cultural/humanities courses satisfying. They look for what is the easiest to take. He thinks if we could provide intellectual culture courses it would be helpful for the students.

David Hull—years ago there was an English signature course. It would be interesting to know why it no longer exists.

Jon Olson—if improving the experience for the students, then he is for it.

2. Integrated Core

A. All students must meet a set of requirements by earning 8 “flags”

Philip Varghese—ethics and leadership flag helpful with ABET

Des Lawler—engineering writing much stronger, will earn more flags

Jon Olson asked how narrow of a list of courses are under multicultural perspectives and diversity flag.

Archie Holmes—this is why we need someone to oversee the core curriculum

Paul Woodruff—he thinks that at least ½ of the current courses offered would provide flags

B. Thematic Strands

can't tell what it means

Archie Holmes—focuses on careers not major: for example, if an engineering student is interested in public policy, there is a set of courses for the student to take and the student does not have to worry whether the courses meet requirements.

Paul Woodruff—they are like menus, the courses are already planned

C. 3 Hour Course on Science and Technology

--no comments

3. Enhancing Students' Ability to Find Their Way

A. Defer Declaration of a Major

how do you define 20%? Lawler—20% of freshmen

Archie Holmes—who decides who the 80% is? We need to gain greater control over admission

Joe Beaman—doesn't have the resources for people to “try out” engineering, taking away seats from those that know they want engineering. He already has more than he can handle.

Jon Olson—what does “pre-admission” mean? We already have that students making satisfactory academic progress after 2 years move on to major sequence. What happens to the other 20%?

There was discussion that pre-admission is basically the same as our current basic and major sequence

David Dolling—if a student receives a letter from UT that says we will “pre admit” them and they receive letters from Purdue or GA Tech that say they are admitted, they will go to Purdue/GA Tech. Won't look at UT.

do we know what % leave engineering because they don't want engineering or because they failed calculus and/or physics?

--Al Meyer says about 1/2 for each reason.

B. Establish a University-wide Advising and Career Center

Archie Holmes – we have capable students and they will graduate if we put them in the right place. There was continued discussion about the retention rates. Archie feels with broader advising we can place students better.

Phil Schmidt – most kids have not tried engineering after the first year. What is wrong with attrition rate higher than 20% if they are having a learning experience? Second year is when they really start to experience engineering. Archie Holmes did not agree, students in electrical engineering take more engineering courses their first year. And thinks maybe we should change the fact that some students are not experiencing engineering in their first year.

Al Meyer – 10 years ago there was a UT Advising Center. Why was it closed down?
Archie Holmes is trying to find a report on that.

Jon Olson – feels that making room for transfer students is an internal problem.

4. Establish a University College

Allen – why is this not a function of the Provost's Office?

Brent Iverson (member of Task Force) – if we are going to implement changes, someone needs to oversee. They submitted 2 proposals, one with the Provost as head and one with a dean. They chose the dean because 1) all entities (colleges and schools) will pull away from the core curriculum so they needed a structure with the same standing; 2) if a Provost was in charge, imagine if the UC was all set up and the Provost thought the UC was more important than other university initiatives, then he could put resources there instead of elsewhere. Fox in the henhouse scenario; 3) resources...they talked about adding new resources, best shot at funding the new core curriculum was to fund a new entity instead of asking for funding for something that already exists. Philanthropy is the key to raise money. Would need \$300M.

Hillary Hart asked if there are any models of the UC out there?

Des Lawler indicated Notre Dame is the closest thing. They have students in technology areas take one Freshmen curriculum and students in Liberal Arts take another Freshmen curriculum. They have extensive advising.

Jon Olson is a graduate of Notre Dame and he was not aware of the First Year Program when he was there.

Archie Holmes said he just visited there and they do make their students aware of it now. Notre Dame faculty are not fans of the First Year Program.

Phil Schmidt – this is not serving the best interest of our engineering students. Our students have pride in being in engineering. Seems they are taking our microcommunity with identity and throwing the students into a macrocommunity.

Des Lawler – nothing says it is going to destroy our freshman experience. He was opposed to the idea until he started thinking about it as a university professor not an engineering professor. He thinks we can make a better experience for those 20% we lose.

Keith Johnston – philanthropy – is this money we would have received and is being redirected?

Brent Iverson – has to be new money. How can we go to the legislature and to parents and ask for money for what we were supposedly doing already?

Dean Streetman then had some comments, since he is a fundraiser. He said you cannot get that kind of money from philanthropy. Completely unrealistic goal to get \$300M endowment.

--there are only 3 resources: the state, student tuition, philanthropy; and no one has talked with the students about taking on that burden. The only other possibility would be to take the money out of the instructional budget of each college and moving it into the University College. That would be very damaging to the colleges.

Archie Holmes asked if \$400M suddenly appeared to fund the UC, would the dean be against it? The dean said yes.

The dean does not want to lose the freshman class. He agrees that students won't even consider UT on a pre-admit basis.

David Dolling – if the University got the money and they distributed it, Engineering would get approx. \$1.4 M. We could handle the problem if we got that money to put towards advising services.

The meeting wrapped up at 5:00.

Desi Kovar said that comments can be emailed to a Faculty Council representative or can be posted on the Faculty Council website.

What are the next steps for this? As Archie Holmes understands it, the proposal will go on to the Educational Policy Committee (Archie is chair) of the Faculty Council. They will then probably be charged to come up with something to give to the Faculty Council.