Engineering Faculty Council

Meeting Agenda
December 15, 2015
11:00 a.m.
202 Hammond Building

1. Approval of minutes for the meeting of November 10, 2015
2. Updates from Undergraduate Studies Committee (Chris Giebink)
3. Updates from Graduate Studies Committees (Esther Gomez)
4. Updates from Engineering Technology Committee (Ron Land)
5. Updates from Faculty Senate (Doug Wolfe)
6. Dean’s Report (Amr Elnashai)
7. Other Business
Engineering Faculty Council  
Meeting Minutes  
November 10, 2015 11:00 a.m.  
228 Hammond

Present: Amr Elnashai, Blaine Prichard, Blaine Prichard, Chris Giebink, Christine Masters, Conrad Tucker, Doug Wolfe, Gary Gray, Jose Palacios, Nanyin Zhang, Peter Butler, Ronald Land, Zoubeida Ounaies

1. Approval of minutes for the meeting of October 20, 2015  
Unanimously approved.

2. Updates from Undergraduate Studies Committee (Chris Giebink)  
Nine course changes:  
• Addition of long descriptions for bulletin for 6 courses: ME 315, ME 320, ME 325, ME 375, ME 452 and ME 460. Mainly wording suggestions and grammar changes.  
• 2 courses with changes in prerequisite(s): ME 404 and ME 431.  
• Add a permanent course number: AE 453  
• Request for academic controls for EE.  
  o Background: EE is the only major in the College that does not have academic enrollment controls. Students who cannot get accepted into other majors use EE as backup. These lead to graduation problems. It takes some 5 to 6 years to graduate. EE provided comprehensive and compelling data to support their suggestion for enrollment control. Minimum GPA is set to ensure compatibility.  
• All recommendations anonymously approved.

3. Updates from Graduate Studies Committees (Peter Butler)  
Three course proposals:  
• AE 579 and IE 586 were approved by the GS&R committee. The recommendations by GS&R for these two course proposals were unanimously approved by EFC.  
• BME 594 was returned to department for revision.  
Four program proposals have been approved by the GS&R committee:  
• ME: Master of Engineering in Engineering Leadership and Innovation Management (ELIM) – Approved.  
• BME: Add a Non-thesis Master of Science Degree in Biomedical Engineering - Approved  
• AE: Create a One-Year Master of Engineering Degree (M.Eng.) in Architectural Engineering - Approved  
• CSE: Delivery of M. Eng. in Computer Science and Engineering at Penn State’s Facility in Reston, Virginia - overall the committee was supportive of this proposal but it was not clear who would teach the courses.  
Recommendations by the GS&R committee for all proposals have been unanimously approved.

4. Updates from Engineering Technology Committee (Ron Land)  
Nothing to report.
5. Updates from Faculty Senate (Doug Wolfe)
   - Legislative report on revision of standing rules and procedures to allow comments from the Executive Vice President and Provost.
   - Senate Committees on Faculty Affairs and Intra-university Relations: Discussed a trend that has been going on for years associated with the number of full-time faculty members, including tenure-track and non-tenure-track. From 2004 to 2010, full-time faculty number increased from 4700 to 6000; however, the number and percentage of tenure-track faculty have not kept pace: 25% reduction in the past 18 years in promotion of full-time faculty as standing appointment at Penn State. This is affecting standing members of committee’s job responsibilities that the tenure-track faculty takes on before tenure. Report on this issue has been created long time ago, but no action has been taken. Significant reduction of tenure track faculty and increase of fixed-term faculty.
   - Forensic report regarding recommendation for a joint committee on first-year students’ well-being and safety. Recommend a university-wide course for freshmen, such as on sexual assault, etc. There will be an informational report discussing the possibility of requiring a course for all first-year students on issues such as well-being and safety, with an emphasis on building positive relationships and sexual misconduct. No course has actually been approved; this is just a recommendation from the joint committee.
   - Legislative report with regards to amendment to accommodate unit representation while providing flexibilities of committees on rules to retain, where appropriate, seasoned senators who have served either 6 or more consecutive years. With reduction of total number of senators down to 200, there is a desire to maintain some of the historical knowledge of some of these committees. A proposal has been presented to increase the number of senators serving 7 consecutive terms as a committee member or 4 consecutive terms as a committee chair; this requires two-thirds majority approval of the Senate.
   - Senate Committee on Committees and Rules has a revision of standing rules for faculty of athletics for the University Park. They started to bring in faculty members to serve as their mentors on the faculty teams. This has been well received; now all 31 athletic programs have a faculty mentor or faculty advisor. They would like to have some overlap between the jobs and responsibilities as a mentor and extend the term from the current four years to five years.
   - Another legislative report is about Ombudsperson-Elect: the term is 4 years with no term limit. The Ombudsperson-Elect shall have no formal role or responsibility, other than to acquire a thorough understanding of university policies that pertain to faculty rights and responsibilities and promotion and tenure, and other aspects of the position.
   - Legislative and Curricular Affairs: acquisition of credits described in Faculty Senate Policy 42-00 to include statement about transfer credits (Policy 42-82). It eliminates 800-level course credits and replace them with 400-level.
   - Senate Policy 54-90 (Academic Renewal): side effect of the implementation of LionPath. Will eliminate the number of late drop credits. Reset the number as provided by Policies 34-89.
   - Revision of tenure clock at the College of Medicine. Difficulty keeping some of their good talents primarily because they are not competitive compared with the other Big 10 universities. They have already adjusted the tenure clock to align with the decrease of the likelihood of obtaining large grant by the fifth year. As a result, they are not able to retain
some of their highly qualified faculty. They would like to change the requirement associated with the tenure clock for any age grant past the fifth year as well as extending tenure review past the 8th year to align better with the Big Ten schools and help retain faculty.

- Informational report from the communication sub-committee of 2013-2014 Health Care Task Force Report. Will send more info after reviewing the report.
- Engaged Scholarship includes undergraduate research, internship, study abroad, study away, embedded travel courses, service learning, community-based learning, capstone courses with an out-of-class component, clinical experiences, and self-directed engagement.

6. Dean’s Report (Amr Elnashai)
- Report on non-tenure track career path and progression models have been taken to the Provost. However, Faculty Senate has taken on this issue and we cannot progress independently. Report was also submitted the chair of Faculty Senate.
- Submitted the blueprint for College of Engineering to Provost. Request $6.8M permanent allocation over the next five years to support faculty expansion; $20-40M temporary funds for startup and refurbishment. We will increase undergraduate enrollment by 10% over 5 years, leading to $18M increase in tuition per year for the university. We would like to increase MS enrollment from the current 100 to 400 students in five years, resulting in another $19M per year to share with the university.
- Alliance with Texas A&M University in energy and food. Met with key personnel at federal agencies and companies including NSF, USAID, NIFA, two major companies as contractors working with USAID, and Office of Science and Technology Policy. Agreed to have small number of students to have a joint REU program.

7. Other Business
- Igor Jovanovic, the current EFC Chair, announced his departure from Penn State University effective December 31, 2015. The current EFC Vice-Chair Chris Giebink will assume the responsibility of EFC Chair from January 1, 2016.
<table>
<thead>
<tr>
<th>Type and Description of Change</th>
<th>Description or Rationale for Curricular Actions</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>EDSGN 100H - Introduction to Engineering Design-Honors</strong>&lt;br&gt;Submitted by: Matthew B. Parkinson</td>
<td>Honors Introduction to Engineering Design introduces students to critical thinking skills and formal approaches to engineering problem solving in a global context. Through this class, students will develop an awareness of the engineering design process and an appreciation for the science and art that engineers wield. They will become meaningfully engaged in design, using tools and techniques that can facilitate successful execution of the process, enabling you to identify, formulate, and solve engineering problems. The objectives of the course include an introduction to critical thinking and problem solving through the engineering design process, develop basic prototyping skills (including both physical and virtual models), acquire visual, oral, written and web-related communication skills and learn to operate well within a team environment. The material will be presented through a variety of hands-on activities and one or more, smaller guided project(s). Students will be evaluated on their knowledge of these topics through quizzes on topic knowledge, oral and written reports, and case-based homework assignments. These experiences will provide the setting for the development of team-related and communication skills. Since this is an Honors course, projects will be undertaken from a more holistic perspective. There will be significant discussion, writing, and global design elements to the course. Students will complete a portion of the project work in teams and part of their assessment will be based on their contribution and collegiality.</td>
</tr>
</tbody>
</table>
A total of 10 proposals were reviewed:

- 5 Course Proposals
  - BME 594 – Approved
  - AE 535 – Approved
  - ESC 520 – Approved
  - ESC 522 – Approved
  - ESC 523 - Approved

- 2 Program Proposals
  - Electrical Engineering One-Year MS Program Change (reduced number of credit hours) – Approved
  - Engineering Science and Mechanics One-Year MS Program (enable completion of MS in 1 year instead of 2 years)

- 2 Graduate Faculty Nominations
  - Teresa Lang – Approved
  - Frank Koe - Approved

- 1 Policy
  - MEng Policy Change – committee is supportive of the policy change
The current Master of Science Degree (M.S.) in Engineering Science and Mechanics requires a total of 32 credits, including 2 credits of seminar and 6 credits of thesis. The proposal for this M.S. program begins with a review of the current requirements and a discussion of the need for change. This interdisciplinary program is designed for individuals with a bachelor's degree in engineering, mathematics, or related fields who wish to gain a deeper knowledge of engineering science and mechanics through coursework and research opportunities. It is expected to appeal to engineers and scientists interested in a variety of fields such as aerospace, agricultural and biological, architectural, biomedical, civil, mechanical, nuclear, and petroleum engineering, engineering mechanics, engineering science, and materials science and engineering. Due to its inherent breadth and depth, students will be able to choose from a very wide range of courses in fluid mechanics, materials science, physics, chemistry, biology, and medicine. The focus of the 1-year degree is on full-time resident students. It is expected to appeal to engineers and scientists interested in a variety of fields such as, but not limited to, aerospace, agricultural and biological, architectural, biomedical, civil, mechanical, nuclear, and petroleum engineering, engineering mechanics, engineering science, and materials science and engineering. Since the fusion of these concept areas represents the essence of Engineering Science and Mechanics, students are required to take a minimum of one course in each area. Given the interdisciplinary nature of the proposed program and its broad application to many fields, we anticipate that this one-year degree will be sufficiently demanding in engineering science and mechanics, either domestic or international M.S. students.

Summary of Discussion Points

1. I agree with your comments regarding the differences in required ECE/ESR credits hours between the thesis and non-thesis. Why should the thesis option have more flexibility with course credits?

   - Table 1 on page 5 indicates that the non-thesis M.S. students are required to take a minimum of 16 ECE/ESR credits. Why should the thesis option have more flexibility with course credits?

2. I can see the concern. It does not make sense to award the "same degree" essentially with varying levels of credits being required. To resolve this, my question is: Is there a way to increase the 4 credit independent study in the summer (if needed)? This is of course, a question directed to the ESM experts not to the EFC committee, unless someone on the committee can clarify it.

3. I think I can see the concern. It does not make sense to have two "similar degrees" essentially with varying levels of credits being required. To resolve this, my question is: Is there a way to increase the 4 credit independent study in the summer (if needed)? This is of course, a question directed to the ESM experts not to the EFC committee, unless someone on the committee can clarify it.

4. I can see the concern. It does not make sense to award the "same degree" essentially with varying levels of credits being required. To resolve this, my question is: Is there a way to increase the 4 credit independent study in the summer (if needed)? This is of course, a question directed to the ESM experts not to the EFC committee, unless someone on the committee can clarify it.

5. I agree with the comments regarding the differences in required ECE/ESR credits hours between the thesis and non-thesis. Why should the thesis option have more flexibility with course credits?

   - Table 1 on page 5 indicates that the non-thesis M.S. students are required to take a minimum of 16 ECE/ESR credits. Why should the thesis option have more flexibility with course credits?
Summary of Discussion Points

Course Title: Historical Structural Design Methods

- The comments on the original submission appear to be adequately addressed, so I support the revised proposal.

Course Title: Engineering at the Nano-scale

- The comments on the original submission appear to be adequately addressed, so I support the revised proposal.

Course Title: Mentored Research Project

- The comments on the original submission appear to be adequately addressed, so I support the revised proposal.