Engineering and Computer Science Update

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Dean

ECS Board of Advocates
April 19, 2013

What we’ll will cover this morning

- Update since September meeting
- Open discussion time on issues
- Discussion/approval of ABET educational objectives by each program
- Hear about research from two faculty

A brief update on what’s happened since our October meeting

- People
- Academic Programs
- Facilities
- Undergraduate program planning
  - Adam Ecklund
- Development
  - Kristen Box

The first 8 months has felt like a sprint!
We’re in the midst of major personnel changes

- Faculty departures
  - Retirement (Summer 2013)
    - Dr. Robert T. Doty
    - Joined ECS in 1987
  - Leaving Baylor for other opportunities
    - Dr. Deify Law
      - Going to Cal State, Fresno
    - Dr. Ben Song
      - Going to Argonne National Laboratory

We’ve had some outstanding successes in recruiting this year

Dr. Keith Schubert, ECE
- Associate Professor
- Bio-imaging
- Proton tomography
- Ph.D., UC Santa Barbara
- Currently at Cal State, San Bernardino

Dr. Jordan Raney, ME
- Assistant Professor
- Material Science
- Ph.D., Cal Tech

More outstanding new faculty

Dr. Doug Smith, ME
- Associate Professor
- Computational Mechanics
- Ph.D., Univ. of Illinois
- Currently at Univ. of Missouri

Dr. Scott Koziol, ECE
- Assistant Professor
- Robotics
- Ph.D., Georgia Tech

The new faculty hires will be a net increase of one for Fall 2013!
Personnel changes in the Dean’s office

Dr. Adam Ecklund
Assistant Dean for Undergraduate Programs

Ms. Kristen Box
Director of Development

Mr. Pat Hynan
Director of IT and Facilities

Facilities Update

• We’re in the BRIC!
  – ECE moved their research labs January

ME will move some faculty next month

Photonics Research Laboratory

New Space Opportunity

• Business school should complete fund raising for their new building by fall
• Rogers Building = 65k square feet
• Cashion + Hankamer = 180k square feet
• We have been asked to put together a proposal on the Cashion/Hankamer space
• Put on hold a design center that was discussed in the fall meeting
Moving our academic programs forward

- Project management certificate – will roll out in the fall

Thank you

For you input into the development of the certificate.

Administration has approved:

- Renaming our freshmen engineering program to “Pre-Engineering”
- Minimum admission requirements to pre-engineering in Fall 2014 to 1110 SAT and 24 ACT – math + verbal
- Other programs in the state:
  - UT-Austin – 600 math SAT
  - TAMU – 550 math SAT

Reinventing the EGR Degree

- Eliminating many existing tracks that look like ME or ECE
- Establishing a coherent core
- Keep Biomedical tracks
  - Biomechanics
  - Biomedical signals
- Developing new track in reservoir geology

Ph.D. program proposals are at different stages

- CS is reworking their proposal
  - Plan is to resubmit in late summer/early fall
- ME submitted in November
  - In the Provost office
  - Once new tenure and promotion guidelines approved, the proposal should move forward
1969 – We walk on the moon!

1969 - Woodstock

1969 – Wal-Mart Incorporates

1969

Last time a chemical engineering program was started in Texas
Exploring a new degree program

• We may have a unique opportunity to plant a chemical engineering program
• Chemical companies are getting ready to spend $70+ billion along the gulf coast in new plants in the next decade
• Pharmaceuticals are beginning to move into the state
• Other industries (semi-conductor, construction, and food process) hire chemical engineers
• Texas Higher Education Coordinating Board is not approving new engineering programs in state schools

Exploring a new degree program

• High interest on the Baylor Board of Regents for starting a chemical engineering program
• Been tasked with developing costs for starting a new department from scratch

Planning for the undergraduate program
Dr. Adam Ecklund

Update on development
Ms. Kristen Box
Overview of discussion items

- Increasing visibility for ECS
- Expanding employment opportunities for our students
- Starting industry advisory boards for each department
- Structure of the ECS Board of Advocates
- Improving recruiting of students into our programs
  - Undergraduate
  - Graduate
- Increasing giving among ECS graduates

Increasing visibility for ECS Program

- With Industries
- With prospective donors and friends of our programs

Some things I’ve been doing to build ECS visibility the past eight months

- Baylor Business Network
- Career Center
- Utilizing TAMU industry contacts to inform companies about Baylor ECS

Increasing employment opportunities for our students

- “STEM” career fair last fall was about 48 companies
- Reaction from a manager at URS (#275 on Fortune 500, 46k employees)
  – “In our leadership team meeting this week, I introduced the topic of Baylor Engineering...a lot of my folks were surprised, especially when I cited the numbers you provided.”
Item for discussion

Departmental Industry Advisory Boards

Departmental advisory boards are the norm in most programs

- Expands the number of companies with input into programs
- Discipline specific advice
- Alumni tend to relate more to the department than the school (or college)
- Development is more focused at the department level

Item for discussion

Structure and size of the Board of Advocates

- Other school level Boards typically are over 30
- BoA should be forward looking for the school
- Structure part of the board meetings into subcommittees
  - Possibilities:
    - Development
    - Undergraduate/EGR program
    - Graduate program
    - Visibility/outreach/ECS Network
  - Other "ad hoc" committees as needed
- Want the board meetings to be "working meetings"
ABET evaluates nine areas of each program

- Students
- Program Educational Objectives
- Student Outcomes
- Continuous Improvement
- Curriculum
- Faculty
- Facilities
- Institutional Support
- Program Criteria

ABET Shortcoming Terminology

- **Deficiency** - Procedure is not satisfied. The program is not in compliance with the criterion, policy, or procedure.
- **Weakness** - Program lacks strength of compliance to ensure that the quality of the program will not be compromised. Remedial action is required.
- **Concern** - Program currently satisfies a criterion, policy, or procedure, but the potential exists for the situation to change.

Our ABET timeline

- Revised program educational objectives during fall 2012
  – Met with local BoA members to review revised PEOs in early December
- Response to Draft Statement submitted February 6, 2013
  – February 6, 2013
- ABET asked for clarification on several points in the February 6, 2013 document – April 15, 2013
- Have until July to provide any more response
- Final Statement – July 2013

Draft Statement
Best Case Outcome

Program Educational Objectives

- Electrical and Computer Engineering
- Mechanical Engineering
- General Engineering
- Computer Science

THANKS FOR YOUR TIME

Questions?