Overview of Programs

Scope, Size, Demographics

• Scope (College of Engineering)
  • 12 Academic Programs

• Size
  • 7123 Undergraduate Students
    Dept. of Mechanical Engineering (1943 students)
    Dept. of Electrical and Computer Engineering (1696 students)
  • 54.8% Growth Since 2008

• Demographics
  • 15.4% Women
  • 11.4% Underrepresented Minorities
  • 11.6% International
  • 38.7% Non-Resident
Overview of Programs

Success of our Graduates

- 73% of Graduates are Placed at Graduation
- 95% of Graduates are Placed at Six Months
- Fall 2013 Data (% placed at graduation, average starting salary)

<table>
<thead>
<tr>
<th>Program</th>
<th>% Placed</th>
<th>Average Starting Salary</th>
</tr>
</thead>
<tbody>
<tr>
<td>Aerospace Engineering</td>
<td>41%</td>
<td>$60,960</td>
</tr>
<tr>
<td>Agricultural Engineering</td>
<td>62%</td>
<td>$58,558</td>
</tr>
<tr>
<td>Biosystems Engineering</td>
<td>100%</td>
<td>$59,667</td>
</tr>
<tr>
<td>Chemical Engineering</td>
<td>70%</td>
<td>$66,373</td>
</tr>
<tr>
<td>Civil Engineering</td>
<td>75%</td>
<td>$53,807</td>
</tr>
<tr>
<td>Computer Engineering</td>
<td>63%</td>
<td>$71,625</td>
</tr>
<tr>
<td>Construction Engineering</td>
<td>74%</td>
<td>$54,002</td>
</tr>
<tr>
<td>Electrical Engineering</td>
<td>62%</td>
<td>$64,460</td>
</tr>
<tr>
<td>Industrial Engineering</td>
<td>94%</td>
<td>$61,400</td>
</tr>
<tr>
<td>Mechanical Engineering</td>
<td>63%</td>
<td>$62,063</td>
</tr>
<tr>
<td>Materials Engineering</td>
<td>80%</td>
<td>$65,500</td>
</tr>
<tr>
<td>Software Engineering</td>
<td>100%</td>
<td>$68,715</td>
</tr>
</tbody>
</table>
Overview of Programs

Prior Accreditation History

- 10 Programs Had Their Accreditation Renewed (date of initial)
  - Aerospace Engineering (1960)
  - Agricultural Engineering (1936)
  - Civil Engineering (1936)
  - Computer Engineering (1979)
  - Construction Engineering (1976)
  - Chemical Engineering (1936)
  - Electrical Engineering (1936)
  - Industrial Engineering (1956)
  - Mechanical Engineering (1936)
  - Materials Engineering (1999)

- 2 Programs Were Accredited for the First Time
  - Biosystems Engineering (2011)
  - Software Engineering (2011)
Accreditation Process

- Accrediting Body
  - Accrediting Body: ABET
  - ABET Accreditation
    - Applied Science Accreditation Commission (ASAC)
    - Computing Accreditation Commission (CAC)
    - Engineering Accreditation Commission (EAC)
    - Engineering Technology Accreditation Commission (ETAC)
Accreditation Process

- Overview of Process
  - Self-Study Report; Site Visit; Due Process Response
  - Criteria
    - Students, Curriculum, Faculty, Facilities, Institutional Support
    - Program Educational Objectives, Student Outcomes, Continuous Improvement
    - Program-Specific Criteria
  - Shortcomings: Deficiencies, Weaknesses, Concerns
  - On a Six-Year Cycle (if “Next General Review” is outcome)
Accreditation Process

- Three-Phase Process
  - Assessment Planning
  - 18-month Accreditation Process
  - Post-Accreditation Process
Accreditation Process

Three-Phase Process

• Assessment Planning (Phase I)
  • Implement the assessment process for program educational objectives and student outcomes.
  • Demonstrate a continuous improvement loop.
  • Collect student work examples.
Accreditation Process

Three-Phase Process

• 18-month Accreditation Process (Phase II)
  • Request for Evaluation (RFE) [January 2012]
  • Self-Study Report [July 2012]
  • On-Site Visit [November 2012] – one Program Evaluator (PEV) per program and a chair & co-chair
  • Due Process Response Period [January 2013–June 2013]
  • Decision and Notification [August 2013]
Accreditation Process

- Three-Phase Process
  - Post-Accreditation Process (Phase III)
    - Re-visits, Reconsiderations & Appeals
    - Reporting Program Changes
    - Complaints to ABET
    - Continue Assessment Planning
Accreditation Process

- **Value to Program and Graduates**
  
  • “Proof that a collegiate program has met certain standards necessary to produce graduates who are ready to enter their professions.” (ABET)

  • “Students who graduate from accredited programs have access to enhanced opportunities in employment; licensure, registration and certification; graduate education and global mobility.” (ABET)
Accreditation Process

- Professional Service of ISU Engineering Faculty
  - ABET Presidents
    - David Holger (2009-2010)
  - Engineering Accreditation Commission
    - David Holger (Chair, 2004-2005)
    - Sarah Rajala (Vice Chair of Operations, 2013-2014)
    - Sarah Rajala (Chair-Elect 2013-14 and Chair 2014-15)
  - Team Chairs
    - Sarah Rajala
    - Diane Rover
    - Doug Jacobson
  - Program Evaluators
    - Seven trained PEVs across the college
Results

Current Accreditation Status

• All twelve programs accredited (NGR)

Program Results

• AgE, BSE, CivE, CprE, EE, IE, MatE, SE: No Shortcomings
• AeroE: Concern – PEO assessment and evaluation
• ChemE: Weakness – Need 1.5 years of engineering topics
  Concern – Hazard analysis course needed
• ConstrE: Weakness – Student Outcome assessment and evaluation
  Concern – Topic coverage documentation
• ME: Concern – Student : Faculty Ratio too high
  Concern – Student : Facility Ratio too high
- All Weaknesses addressed in our Due Process Response
- Concerns for Mechanical Engineering were not resolved
- Other Concerns were resolved or criterion eliminated by ABET
Response

- Chemical Engineering curriculum adjusted to address both the weakness and the concern by adding a required hazard control course.

- Construction Engineering formalized the coverage of several topics in their courses and syllabi.

- Mechanical Engineering continues to struggle with fantastic enrollment growth. New faculty were hired in the fall of 2013. Enhancement of facility is being considered.