

Strategic Planning Undergraduate Education

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Introduction & Assumptions

- Continue to recruit and educate talented and diverse student body
- Emphasis on fundamental engineering and technical expertise and analytical skills
- Students will continue to be leaders in industry and academia
- Need to prepare students to solve complex global problems



Three Key Recommendations

- Increase flexibility of curriculum and student experience
- Enhance quality of teaching through innovative methods and technologies
- Expand programs to enhance leadership & enabling skills



Increase Flexibility

- Maximize value students gain from broad education where technical knowledge is embedded
 - Increase flexibility of curriculum
 - Encourage Study Abroad or other intercultural experiences
 - Increase ability to take courses outside the college
 - Minors in other colleges
 - Enhance Independent Major
 - Reflect interest areas of business, pre-med, entrepreneurship



Challenges to Increasing Flexibility

- Tensions exist within faculty
 - Core (depth) vs breadth
 - Principles vs applications
 - Technical depth vs enabling skills



Resources Needed – Increase Flexibility

- Encouragement (bully pulpit) from Senior Leadership at University and College
- Data from student surveys confirming student perception of inflexibility
- Assistance/support from corporate leaders



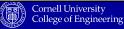
Enhance Quality of Teaching

- Students learning styles have changed mismatch with faculty teaching styles
- Expand resources for improving faculty teaching (great start with TEI gift from two key ECC members)
 - Increase College Teaching Excellence Institute staff
 - Director in high demand, needs assistance
 - Increase faculty awareness of pedagogical methods
 - Assistance in re-designing courses
 - Provide means for faculty to share best practices
- Integrate real-word experiences into UG program



Enhance Quality of Instructional Facilities

- Continue to modernize teaching facilities (great start with gift from ECC members)
 - Enhance classroom presentation media and equipment
 - Clickers
 - Projection systems (documents and objects)
 - Touch screen computers
 - Transition classrooms to accommodate small group and active-learning
 - Work with faculty to enhance their knowledge of new methods in technical teaching



Challenges to Enhancing Teaching/Facilities

- Convincing faculty there are better ways to teach
- Adequate TA training and resources
- Not clear what the best methods are for specific courses
- Reliability of equipment/support staff



Resources Needed - Enhance Teaching

- Generous gift from ECC Council members to improve classrooms is greatly appreciated and well spent!
- Space suitable for conversion to teaching
- Generous funds to support TEI from two key ECC members has already made a significant difference!
- Kathy Dimiduk needs assistance she is spread too thin!
- Concern about the long-term funding of the program



Leadership/Enabling Skills

- Develop and support programs to foster leadership and team management skills
 - Project management
 - Communication
 - Budget and finance
 - Professional ethics
 - Building inclusive teams
 - Creating a vision, etc.
- Workshops, short courses
- Integrate these skills into technical courses
 - Make it easy for faculty
- Leverage/collaborate with other colleges to increase reach



Challenges – Leadership Program

- Director and staff to lead the initiative
- Advocating importance to get faculty buy in
- Integrating into courses while maintaining rigor of technical content
- Coordination with other on-campus programs



Resources Needed – Leadership Program

- Generous gift to start Engineering Leadership Program!
- In process of advertising for Director
- Alumni help in stressing importance of these skills to Faculty (not just Deans!)
- Data and input from corporate executives and employers
- Volunteers to participate in program
 - in-class presentations

Summary

- Key focus areas for next two years are
 - Improving student flexibility in choosing courses obtaining international experience
 - Enhancing instruction through adoption of new teaching methods and utilization of facilitating equipment
 - Programs to develop leadership and enabling skills

