Global Engineering Education

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• **Flat World**
  – Technology growth has revolutionized the way we live and work
  – Engineering work force is increasingly diverse and global
  – Globalization, technology advances, and evolving demographics are changing the role of engineers in society

• **Engineers Face New Challenges in 21st Century**
  – The Engineer of 2020 reports
  – Importance of global engineering in Continental AG report
  – Relevance of international engineering in NSB study

• **Global Work Force**
  – International experience an important aspect of education
As never before, we compete with international institutions (graduate students, research)

Evolving engineering job market globally affects the way corporations employ, recruit and support research

Students should have international experience as part of their education

Partnerships and programs with a number of institutions

Institutional reputation now a global game

Preparing our students for a global economy

http://viterbi.usc.edu/academics/globalization
Globalization

Educate our students to be global leaders:
- exchange of students and overseas educational programs
- routine use of technology (Technology-Enhanced-Access-to-the-Classroom) to partner in education with elite institutions worldwide.

Partner in research to solve global challenges
- Develop alliances with elite institutions worldwide to effect the solution of global grand challenges, from sustainability to health.

 Lead in the global diffusion of core values and the pursuit of truth.

Continue to be the university of choice for a great number of students from all over the world, who bring talent, ideas, and perspective.

Represent, promote, and increase the value of the USC brand overseas via
- USC embassies abroad
- alumni engagement
- international development
i-Podia: Technology-Enhanced Access to the Classroom
USC+PKU+NTU

Course on “Principle and Practice of Global Innovation Teams”
Students get together at the end of the semester

USC students in LA @ 7pm, Tue.

PKU students in Beijing @ 10am, Wed.

NTU students in Taipei @ 10am, Wed.

Students get together at the end of the semester
Prof. Stephen Lu is proposing an iPodia course on GCSP

- For example, access to clean water
- Teach in 3 weeks modules each GCSP topic
- VSoE/USC will collaborate with key GCSP universities and interested iPodia Alliance members to:
  - Create a multi-school, co-curricular program to jointly develop a for-credit undergraduate course, focusing on the 5 GCSP competency requirements as learning outcomes, for a few selected GCEs
  - Accustom the contents of this new GCSP course with the iPodia peer-learning pedagogy, which exploits learner diversity as learning resource, for students to gain contextual knowledge and develop mutual understanding
  - Deliver this new GCSP iPodia course via the iPodia platform, that connects distant classrooms at multiple universities, for students to learn the 5 GCSP competencies together with their global classmates on local campuses directly
Each GCSP competency module includes three learning activities:

- Lecture and Discussion (weekly)
  - Each 3-week “module” focuses on a specific GCSP competency, and begins with an introduction lecture by a faculty expert in that competency area
  - Lecture contents are distributed before class for students to self-study with learning feedbacks to be used to assemble and guide cohort discussions

- Group Exercise of GCE Cases (weekly)
  - Interactive group exercises are assigned for student groups on each campus to practice different roles and perspectives toward that competency area
  - Real-world cases are used to explicit the impacts of disciplinary, culture, and societal diversities on the studies and solutions of particular GCEs

- Cross-Campus Team Project (weekly)
  - Semester-long projects by cross-campus teams are organized to develop innovative plans and global solutions for that competency area
  - Team project results are presented at a public event, and evaluated in a competition by experts in particular GCEs
Opportunities for Students

- Undergraduate students work with faculty in their research labs
- I-Podia alliance with partner institutions in 10 countries
- Students in I-Podia course get to meet after the course in one country
- VSoE Students participate in Engineers Without Borders (EWB)
- Projects in South American Countries on clean water
- Engineering Writing program – students work on projects
- Maseeh Entrepreneurship Prize Competition
- Min family prize competition
- Summer research programs in different countries
Viterbi-India Program

Research Experience for undergraduate students

- Established in 2010 with support from IUSSTF
- 20 students completing 3rd year of studies from IITs, BITS, IIITs in EE and CSCI areas came to USC in 2016; another 4 students in Bose scholar program
- Students spend 8 weeks at USC during summer and conduct research with faculty
- Highly selective program with over 300 students applying for 20 spots each summer
- Initial screening by IUSSTF officers and final selections by USC
Establish ties with top institutions around the world
Particularly in China, India, we have many partner institutions
Ties in Korea, Singapore, South America, UK, and other countries
Perception and branding important. Pipeline of quality students
Annual Board Meetings in India and China
Support for responding to international collaboration projects
Connecting with our partner institutions for faculty traveling in other countries
Work with USC globalization office and our offices abroad
Summary

• Establish strong presence and brand globally

• Be a global attractor of top talent to VSoE

• Friendraising and Fundraising globally

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