

CACHE NEWS ARTICLE

CAPSTONE DESIGN CONFERENCES

Recently, in June 2010, a series of 3-day Capstone Design Conferences was initiated on a 2-year cycle. The second conference, held at the University of Illinois, Urbana, in June 2012, involved approx. 150 participants (110 faculty, 20 industrial persons, and 20 students). Just two chemical engineers attended (Prof. Warren D. Seider, University of Pennsylvania; Prof. Dong-Ik Song, Kyungpook National University, Korea.)

The conference included approx. 15 panel discussions and workshops, each allotted 90 minutes, including:

- The Art and Science of Problem Definition
- Competition Projects for Capstone Design
- Multidisciplinary Capstone Design
- Required Resources for Capstone Design
- Best Practices for Industry Sponsored Projects
- Forming Student Design Teams
- Student Reflections on Capstone Design
- Global Projects in Capstone Design
- Capstone Design Hub: Building Resources for the
Capstone Design Community

These involved brief presentations by the panelists, highlighting the key issues, followed by lively discussions with the workshop attendees, most of whom had administered design project courses at the senior level for many years. As an example, many approaches were discussed for forming, advising, and grading design teams. To assist, for large classes, on the order of 100-200 students, software packages, such as CATME (developed at Purdue University; www.CATME.org) were used to assist in handling large combinatorial scheduling problems. Included was the sensitive topic of pier-to-pier

design group evaluation and approaches to help design teams coordinate the work on their design projects. In another workshop, the focus was on the formulation of design projects, the role of industrial project formulators, the involvement of industrial organizations in funding design groups to create prototype products, the advice provided by industrial consultants to design teams, and similar topics. Yet another workshop focused on the solution of design projects involving multi-disciplinary design teams. Many of the faculty participants represented large engineering schools, where many of their designs are carried out by design teams involving seniors from several of the engineering disciplines – mostly from mechanical, electrical, systems, materials, and bioengineering departments – rarely including chemical engineering students.

The so-called Capstone Design Community which has organized these conferences, has been developing a Capstone Design Hub, capstonedesignhub.org, over the past two years. A special workshop was held in which the beta-version of the hub was demonstrated. Feedback from the community has been sought by one of the principal organizers, Dr. Susanne Howe of Smith College (showe@smith.edu).

A third Capstone Design Conference is being planned for June 2014. For additional information, feel free to contact Professor Warren D. Seider (seider@seas.upenn.edu).

W. D. Seider

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