CACHE News
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Guide to Teaching Design with Internet Links, Third Edition

by *Warren Seider*

In the spring of 2015, CACHE has posted the third edition of its *Guide to Teaching Design with Internet Links*, which was installed on the CACHE Teaching Resources Center. Two new areas have been added providing Energy Links for Process Design (by B. Wayne Bequette, RPI, and Thomas A. Adams II, McMaster University) and Process Operability (Tom Marlin, McMaster University.) The entire *Guide* includes 13 areas of Product and Process Design, all updated with links functioning in late February 2015:

Product design (Warren D. Seider)
Process flowsheet synthesis (Rafiqul Gani, Warren D. Seider)
Process simulation (Chau-Chyun Chen, Warren D. Seider)
Process integration (Mahmoud El-Halwagi)
Equipment design (Gavin Towler)
Energy Links for Process Design (B. Wayne Bequette, Thomas A. Adams II)
Environment and Sustainability (David Shonnard)
Safety (Dan Crowl)
Optimization – Process Synthesis and Flowsheet Optimization (Lorenz T. Biegler and Ignacio Grossmann)
Process modeling (Rafiqul Gani)
Process Operability (Tom Marlin)
Planning and Scheduling, & Supply Chain Optimization (Ignacio Grossmann and G.V. Reklaitis)
Design case studies and Design problem statements (Ignacio Grossmann, Joseph Shaeiwitz, Richard Turton)

They provided guidance for teaching product and process design, linking to materials from many sources including textbooks, monographs, completed design case studies, design problem

statements, design software, POWER POINT lectures, and related materials prepared by design instructors.

Initially, it was decided the *Guide* would be prepared just for instructors that use the CACHE Learning Resource Center. Sometime in the future, we anticipated it might be adopted for *Chem. Eng. Educ.* and possibly for the broader *CEP* audience. To introduce the *Guide*, Dr. Gavin Towler (UOP, Northwestern Univ.) and Prof. Warren Seider (Univ. of Pennsylvania) presented two workshops at the 2012 ASEE Summer School for ChE Faculty.

To those that teach design, it's well-recognized that even the most comprehensive textbooks don't cover many subjects – with most design instructors assembling materials that supplement the book(s) they adopt. Our *Guide* is a great source of supplemental materials – sufficiently broad to permit design instructors to formulate easily custom-made curricula for their courses.

As anticipated, with so many sections and area editors, overlap among the sections could not be avoided; for example, links to case studies appear in the last section and in several other sections. When searching for case studies, especially, instructors are advised to check those sections in which specific case studies are likely to appear. For example, case studies on molecular structure design can be found in the Product Design section.

Future

We are considering organizing the links to guide students and practitioners, in addition to design instructors, in answering their questions and locating specific instructional materials. In so doing, common key words might be translated into more specific terms; e.g., “mixers” to “agitators” when carrying out equipment design.

To instructors that use our *Guide*, we ask you to make us aware of other sources and links. For some sources, we can create web sites if necessary. Please address these to the area editors or to the overall editor, Prof. Warren D. Seider (seider@seas.upenn.edu). Feel free to suggest new sources or even new areas – we welcome new area editors!