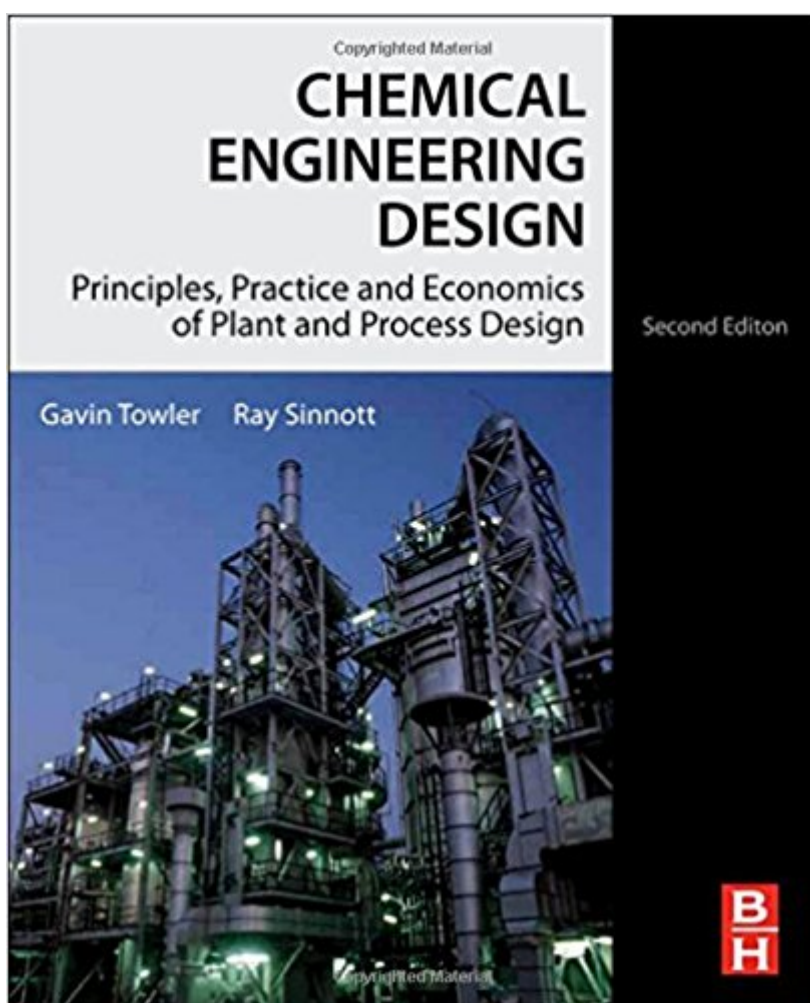


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# Chemical Engineering Design, Second Edition: Principles, Practice And Economics Of Plant And Process Design



## Synopsis

Chemical Engineering Design, Second Edition, deals with the application of chemical engineering principles to the design of chemical processes and equipment. Revised throughout, this edition has been specifically developed for the U.S. market. It provides the latest US codes and standards, including API, ASME and ISA design codes and ANSI standards. It contains new discussions of conceptual plant design, flowsheet development, and revamp design; extended coverage of capital cost estimation, process costing, and economics; and new chapters on equipment selection, reactor design, and solids handling processes. A rigorous pedagogy assists learning, with detailed worked examples, end of chapter exercises, plus supporting data, and Excel spreadsheet calculations, plus over 150 Patent References for downloading from the companion website. Extensive instructor resources, including 1170 lecture slides and a fully worked solutions manual are available to adopting instructors. This text is designed for chemical and biochemical engineering students (senior undergraduate year, plus appropriate for capstone design courses where taken, plus graduates) and lecturers/tutors, and professionals in industry (chemical process, biochemical, pharmaceutical, petrochemical sectors). New to this edition: Revised organization into Part I: Process Design, and Part II: Plant Design. The broad themes of Part I are flowsheet development, economic analysis, safety and environmental impact and optimization. Part II contains chapters on equipment design and selection that can be used as supplements to a lecture course or as essential references for students or practicing engineers working on design projects. New discussion of conceptual plant design, flowsheet development and revamp design. Significantly increased coverage of capital cost estimation, process costing and economics. New chapters on equipment selection, reactor design and solids handling processes. New sections on fermentation, adsorption, membrane separations, ion exchange and chromatography. Increased coverage of batch processing, food, pharmaceutical and biological processes. All equipment chapters in Part II revised and updated with current information. Updated throughout for latest US codes and standards, including API, ASME and ISA design codes and ANSI standards. Additional worked examples and homework problems. The most complete and up to date coverage of equipment selection. 108 realistic commercial design projects from diverse industries. A rigorous pedagogy assists learning, with detailed worked examples, end of chapter exercises, plus supporting data and Excel spreadsheet calculations plus over 150 Patent References, for downloading from the companion website. Extensive instructor resources: 1170 lecture slides plus fully worked solutions manual available to adopting instructors.

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## Customer Reviews

"An essential support text for the traditional design product. ...Well written, it is easy to read and is superbly indexed" --Trans IChemE Â "Bottom line: For a holistic view of chemical engineering design, this book provides as much, if not more, than any other book available on the topic. Nearly every subject is accompanied by examples and new technologies are also addressed. In short, a complete, well-written and illustrated resource that is a pleasure to use." --From [www.cheresources.com](http://www.cheresources.com) (Chemical Engineering Resources) "Chemical Engineering Design is a complete text for students of chemical engineering. Written for the senior design course, and also suitable for introduction to chemical engineering courses, it covers the basics of unit operations and the latest aspects of process design, equipment selection, plant and operating economics, safety and loss prevention. It includes detailed worked examples, case studies, end-of-chapter exercises, plus supporting data, spreadsheet calculations and equipment specification sheets for downloading." --Chemical Engineering Progress "The book was originally written by British chemical engineer Sinnott as Volume Six of the Chemical Engineering series edited by Coulson and Richardson. It was intended as a stand-alone design textbook for undergraduate design projects that would supplement the other volumes, so it was no long stretch to publish it separately in 2008. Towler (chemical engineering, Northwestern U., Illinois) helped update and revise it, and integrated US laws, codes, and standards into it. This second edition takes account of comments about strengths and weaknesses by students and instructors. It also is rearranged to fit a typical two-course senior design sequence better, focusing first on process design then on plant design."

--Reference and Research Book News, Inc.

â ^Bottom line: For a holistic view of chemical engineering design, this book provides as much, if not more, than any other book available on the topic.â ™ Extract from Chemical Engineering Resources review. Chemical Engineering Design is a complete course text for students of chemical engineering. Written for the Senior Design Course, and also suitable for introduction to chemical engineering courses, it covers the basics of unit operations and the latest aspects of process design, equipment selection, plant and operating economics, safety and loss prevention. It is a textbook that students will want to keep through their undergraduate education and on into their professional lives.

I'm using this book for my Chemical Engineering Process Design I and II classes. It has been very useful for assignments, and is relatively easy to read, although economics stuff is sometimes a bit dry. The examples are good, and the supplemental material online has also been very good. It is a good book, with some useful review of heat transfer, and fundamental chemical engineering principles.

Towler and Sinnott's book provides a good overview of process design covers flowsheet layout, simulation, estimation of operating and capital costs, profitability analysis and optimization. The book then covers preliminary equipment design, including pressure vessels, reactors, separators, columns, solids handling equipment, heat exchangers and fluid hydraulics. This is a good overview of process design.

This text was used for two chemical engineering design courses, and has been one of the better texts I've owned. It provided costing and sizing templates that were useful when solving problems. I'll definitely keep it for future reference.

The book isn't particularly good at certain examples.

The various topics covered are done with excellent professional approach and would appeal to engineering students and professionals in the field alike. One would treasure the knowledge acquired after reading this book and can certainly make the best use of it in his respective field of application.

It can be helpful to know the background of the person leaving the review: I obtained both a Bachelor's and Master's degree from the University of Toledo, and for the last three years, I have worked both as a process and process control engineer in industry (2007-2010). Before I purchased a process control book, I did much research and I know now that I made the right decision. Whether you are student who is trying to learn process design for the first time or if you are already in your career (academia or industry), this is a book that compiles much information in one place. The chemical engineering student, as well as the process engineer in industry, would benefit from this wealth of information pertaining to the design of unit operations equipment. Now I use this as reference material for potential, future capital projects at work.

love this book.

Excellent book, I have used it with my students this year and I think it is very useful especially the approach of the examples to practice. Also is very specific in the activity of chemical engineers

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