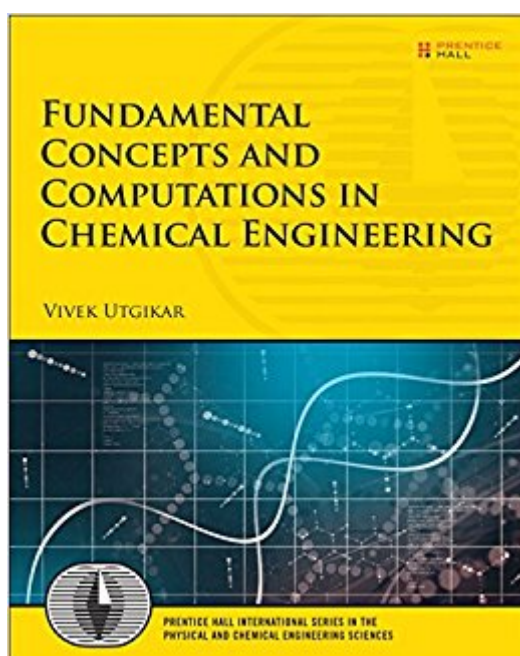


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# Fundamental Concepts And Computations In Chemical Engineering (Prentice Hall International Series In The Physical And Chemical Engineering Sciences)



## Synopsis

The Breakthrough Introduction to Chemical Engineering for Today's Students is well designed for today's chemical engineering students, offering lucid and logically arranged text that brings together the fundamental knowledge students need to gain confidence and to jumpstart future success. Dr. Vivek Utgikar illuminates the day-to-day roles of chemical engineers in their companies and in the global economy. He clearly explains what students need to learn and why they need to learn it, and presents practical computational exercises that prepare beginning students for more advanced study. Utgikar combines straightforward discussions of essential topics with challenging topics to intrigue more well-prepared students. Drawing on extensive experience teaching beginners, he introduces each new topic in simple, relatable language, and supports them with meaningful example calculations in Microsoft Excel and Mathcad. Throughout, Utgikar presents practical methods for effective problem solving, and explains how to set up and use computation tools to get accurate answers. Designed specifically for students entering chemical engineering programs, this text also serves as a handy, quick reference to the basics for more advanced students, and an up-to-date source of valuable information for educators and professionals. Coverage includes

- Where chemical engineering fits in the engineering field and overall economy
- Modern chemical engineering and allied industries and their largest firms
- How typical chemical engineering job functions build on what undergraduates learn
- The importance of computations, and the use of modern computational tools
- How to classify problems based on their mathematical nature
- Fundamental fluid flow phenomena and computational problems in practical systems
- Basic principles and computations of material and energy balance
- Fundamental principles and calculations of thermodynamics and kinetics in chemical engineering
- How chemical engineering systems and problems integrate and interrelate in the real world
- Review of commercial process simulation software for complex, large-scale computation

## Book Information

Series: Prentice Hall International Series in the Physical and Chemical Engineering Sciences

Paperback: 320 pages

Publisher: Prentice Hall; 1 edition (November 19, 2016)

Language: English

ISBN-10: 0134593944

ISBN-13: 978-0134593944

Product Dimensions: 7.9 x 0.8 x 9.9 inches

Shipping Weight: 0.6 ounces (View shipping rates and policies)

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## Customer Reviews

Dr. Vivek Utgikar is a professor of chemical engineering in the Department of Chemical and Materials Engineering and is the Associate Dean of Research and Graduate Education for the College of Engineering of the University of Idaho. He has also served as the director of the nuclear engineering program of the University of Idaho. Dr. Utgikar's teaching portfolio includes a broad range of chemical and nuclear engineering courses such as transport phenomena, kinetics, thermodynamics, electrochemical engineering, hydrogen, and spent nuclear fuel disposition/management. His research interests include energy systems, nuclear fuel cycle processes, modeling of multiphase systems, and bioremediation. He was a National Research Council Associate at the National Risk Management Research Laboratory of the U.S. Environmental Protection Agency in Cincinnati, Ohio, prior to joining the University of Idaho. Dr. Utgikar is a registered professional engineer with process development, design and engineering experience in chemical industry, and holds a Ph.D. in chemical engineering from the University of Cincinnati. His other degrees include bachelor's and master's degrees in chemical engineering from the Mumbai University, India.

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