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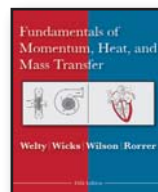
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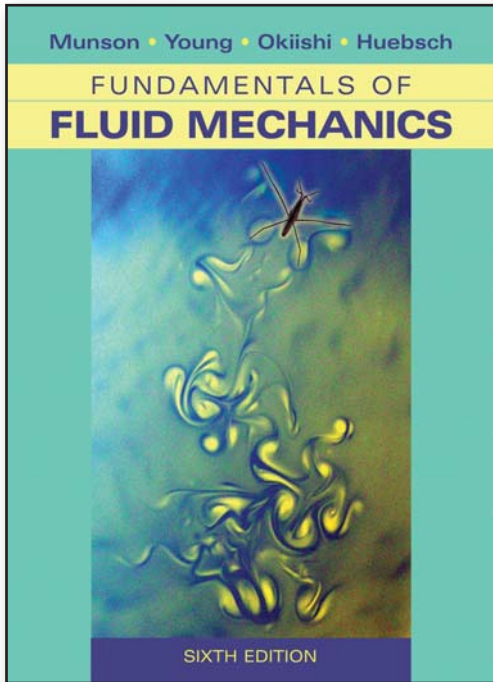
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## Fundamentals of Fluid Mechanics

6th Edition

BRUCE R. MUNSON, the university of Minnesota,  
DONALD F. YOUNG, Department of Aerospace  
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THEODORE H. OKIISHI, Iowa State University, Ames,  
WADE W. HUEBSCH, West Virginia University,  
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Connect the theory to the physical world  
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Now in SI Units throughout!

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Continuing this book's tradition of extensive real-world applications, the new edition includes "Fluids in the News" case study boxes in each chapter, a set of brief stories describing interesting, novel, and current applications of fluid mechanics to help generate student interest in the topic. Many new homework problems have been created associated with these stories. Example problems have also been updated to include graphs illustrating the effects of changing parameter values, and *WileyPLUS* is available for adoption with this text: A complete online learning system to help prepare and present lectures, assign and manage homework, keep track of student progress, and customize your course content and course delivery. Talk to your local Wiley representative for details on setting up your *Wiley PLUS* course.

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- Problems/Exercises – 30% of the more than 1300 homework problems are new for this edition.

**Contents:** 1. Introduction. 2 Fluid Statics. 3 Elementary Fluid Dynamics – The Bernoulli Equation. 4 Fluid Kinematics. 5 Finite Control Volume Analysis. 6 Differential Analysis of Fluid Flow. 7 Dimensional Analysis, Similitude, and Modeling. 8 Viscous Flow in Pipes. 9 Flow Over Immersed Bodies. 10 Open-Channel Flow. 11 Compressible Flow. 12 Turbomachines Appendices: Computational Fluid Dynamics and Flowlab. Physical Properties of Fluids. Properties of the U.S. Standard Atmosphere. Compressible Flow Data for an Ideal Gas. Comprehensive Table of Conversion Factors. Additional appendixes are available on the book companion site.

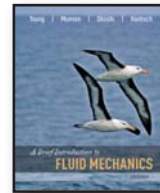
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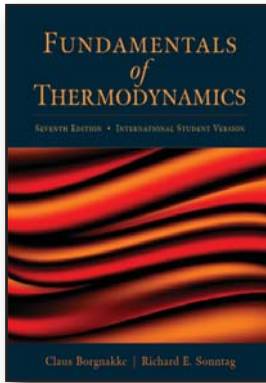
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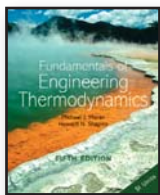


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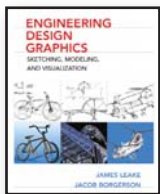
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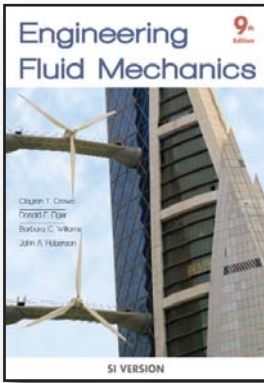
- There is an emphasis on ethics as an everyday issue, with current examples.
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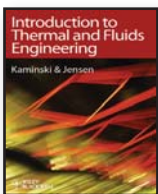
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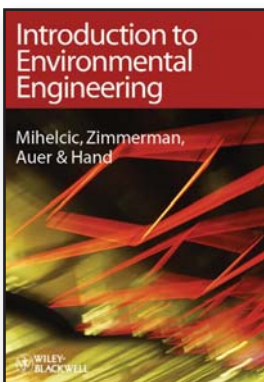
- Visualization: The text uses photos, line drawings, and animations to describe fluid flow phenomena and to illustrate problems.
- Examples: Historically dominated by civil engineering applications, these have been retained while adding material appropriate for other engineering disciplines as well.
- Updated solutions: The text includes more than 1100 end-of-chapter problems.

**Contents:** 1 Introduction. 2 Fluid Properties. 3 Fluid Statics. 4 Flowing Fluids and Pressure Variation. 5 Control Volume Approach and Continuity Equation. 6 Momentum Equation. 7 The Energy Equation. 8 Dimensional Analysis and Similitude. 9 Surface Resistance. 10 Flow in Conduits. 11 Drag and Lift. 12 Compressible Flow. 13 Flow Measurements. 14 Turbomachinery. 15 Flow in Open Channels. *Appendix A-1. Answers A-11. Index I-1.*

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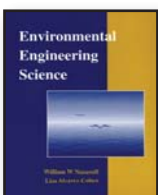
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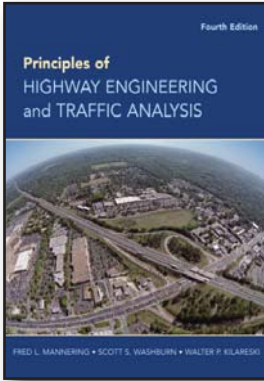
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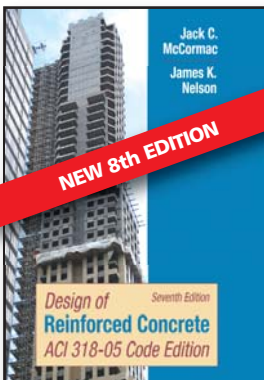
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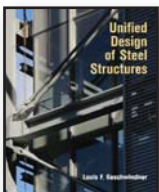
The eighth edition of the best-selling Design of Reinforced Concrete continues the successful tradition of earlier editions, by introducing the fundamentals of reinforced concrete design in a clear and understandable manner.

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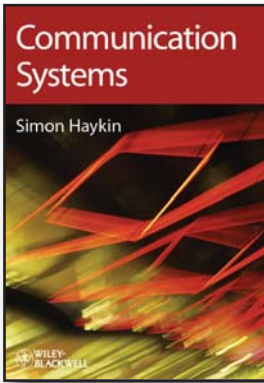
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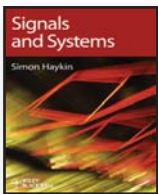


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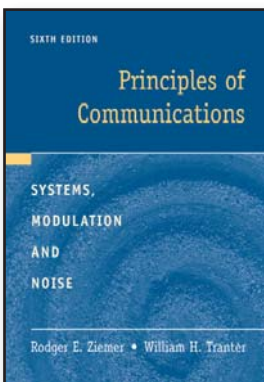
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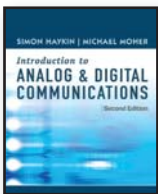
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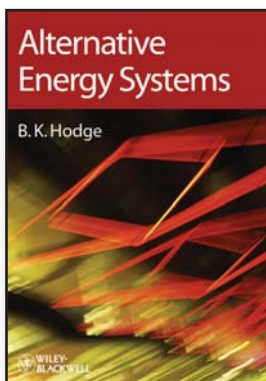
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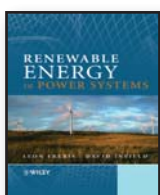
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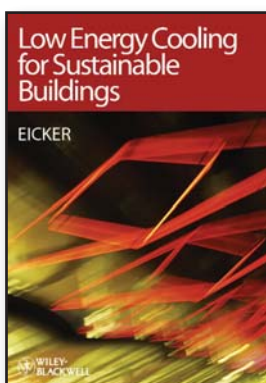
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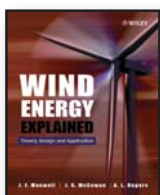
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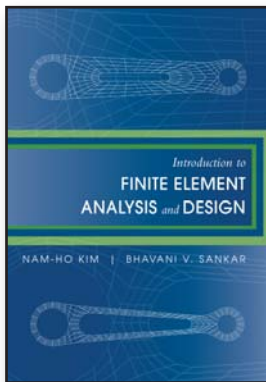
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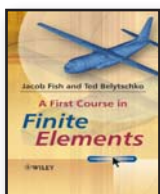
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# MATHEMATICAL & COMPUTATIONAL METHODS FOR ENGINEERING



9780470125397 • 432pp  
October 2008 • Pb  
£45.95/€62.10

Also available:



A First Course in Finite Elements  
by FISH, BELYTSCHKO  
9780470035801 • 336pp  
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## Introduction to Finite Element Analysis and Design

NAM-HO KIM, University of Florida, BHAVANI V. SANKAR.

Discover the theories behind FEM and how to apply the method efficiently.

The text material has evolved from over 50 years of combined teaching experience. It deals with a formulation and application of the finite element method. Kim reflects the different ways this course can be applied in the real world by integrating numerous worked examples from across all fields of engineering.

### Features:

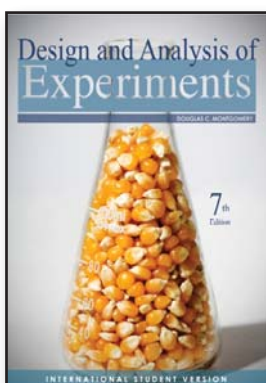
- Prerequisites are included in the early part of the book so that students can have common backgrounds.
- Emphasizes the design aspect of FEM with nine design projects and a dedicated chapter on design using FEM.
- The text takes a software neutral approach, but with numerous examples that could be used with ANSYS, ABAQUS, NASTRAN & I-DEAS.

**Contents:** Mathematical Preliminaries. 1. Stress-Strain Analysis. 2. Uniaxial Bar and Truss Elements – Direct Method. 3. Weighted Residual and Energy Methods for One Dimensional Problems. 4. Finite Element Analysis of Beams and Frames. 5. Finite Elements for Heat Transfer Problems. 6. Finite Elements for Plane Solids. 7. Finite Element Procedure and Modeling. 8. Structural Design Using Finite Elements. Appendices

**Supplements:** Solutions Manual, Student version of NEiNastran software: students can experience a state-of-the-art FEM software free of charge

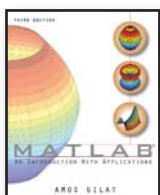
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7th Edition

DOUGLAS C. MONTGOMERY, Georgia Institute of Technology.

The bestselling professional reference for improving the quality and efficiency of working systems.

The seventh edition maintains its comprehensive coverage as the bestseller in previous editions by including new examples, exercises, and problems and expanding the material on optimal designs and robust design.

### Features:

- Emphasis on the connection between the experiment and the model that the experimenter can develop from the results of the experiment.
- New features in Design-Expert V7, including the improved graphics, and JMP.
- Inclusion of material on computer output and computer graphics.
- Expanded chapters on robust design, as well as 2-level and mixed level design.

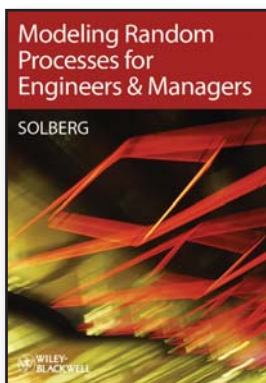
**Contents:** 1 Introduction. 2 Simple Comparative Experiments. 3 Experiments with a Single Factor: The Analysis of Variance. 4 Randomized Blocks, Latin Squares, and Related Designs. 5 Introduction to Factorial Designs. 6 The 2k Factorial Design. 7 Blocking and Confounding in the 2k Factorial Design. 8 Two-Level Fractional Factorial Designs. 9 Three-Level and Mixed-Level Factorial and Fractional Factorial Designs. 10 Fitting Regression Models. 11 Response Surface Methods and Designs. 12 Robust Parameter Design and Process. 13 Experiments with Random Factors. 14 Nested and Split-Plot Designs. 15 Other Design and Analysis Topics. Appendices. Bibliography

**Supplements:** PowerPoint Slides, Solutions Manual

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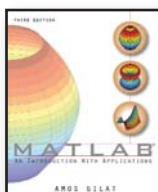
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# MATHEMATICAL & COMPUTATIONAL METHODS FOR ENGINEERING



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A more descriptive approach to stochastic modeling that highlights real-world applications of modeling.

*Modeling Random Processes for Engineers and Managers* offers an accessible entry into a very useful and versatile set of tools for dealing with uncertainty and variation.

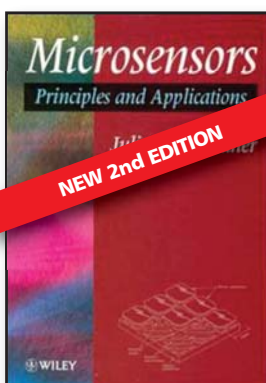
### Features:

- Emphasis on formulation: explains the thinking process required to create an original model via concrete examples.
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**Contents:** 1 Probability Review. 2 Formulating Markov Chain Models. 3 Markov Chain Calculations. 4 Rewards on Markov Chains. 5 Continuous Time Markov Processes. 6 Queuing Models. 7 Networks of Queues. 8 Using the Transition Diagram to Computer. Appendix 1 Visual Basic Code for Closed Queuing Networks. 2 Answers to Selected Exercises

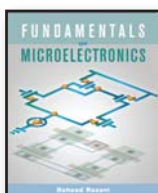
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This exciting new edition provides a timely update of a classic reference on this increasingly important field.

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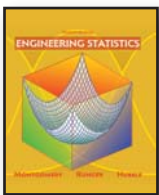
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## Also Available:



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- Emphasis on statistical techniques, as well as a strong engineering and management orientation.
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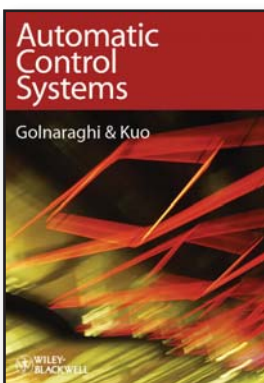
**Contents:** 1 Quality Improvement in the Modern Business Environment. 2 The DMAIC Process Part II: Statistical Methods Useful in Quality Control and Improvement. 3 Modeling Process Quality. 4 Inferences about Process Quality Part III: Basic Methods of Statistical Process Control and Capability Analysis. 5 Methods and Philosophy of Statistical Process Control. 6 Control Charts for Variables. 7 Control Charts for Attributes. 8 Process and Measurement System Capability Analysis Part IV: Other Statistical Process-Monitoring and Control Techniques. 9 Cumulative Sum and Exponentially Weighted Moving Average Control Charts. 10 Other Univariate Statistical Process Monitoring and Control Techniques. 11 Multivariate Process Monitoring and Control. 12 Engineering Process Control and SPC Part V: Process Design and Improvement with Designed Experiments. 13 Factorial and Fractional Experiments for Process Design and Improvements. 14 Process Optimization and Designed Experiments Part VI: Acceptance Sampling. 15 Lot-by-Lot Acceptance Sampling for Attributes. 16 Other Acceptance Sampling Techniques. Appendices

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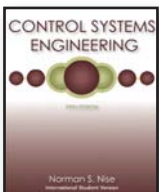
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*Automatic Control Systems* provides engineers with a fresh new controls book with a revolutionary approach that places special emphasis on mechatronics.

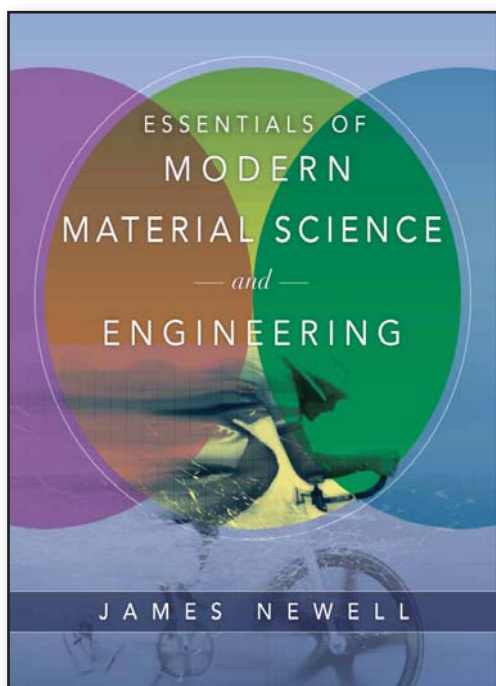
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## Essentials of Modern Materials Science and Engineering

1st Edition

JAMES A. NEWELL, Rowan University.

A unique resource that focuses on modern materials instead of metals.

Newell's *Materials Science Engineering* offers a unique approach that emphasizes modern materials such as polymers, ceramics, and composites. This is a highly visual and accessible Material Science text with traditional contents. This book is a true introductory text; instead of going into great detail in many areas, the book provides key concepts and fundamentals students need to understand materials science and make informed decisions.

### Features:

- It's practical and applicable. It is our goal for students, after completing the course and using this text, that they are prepared to make informed materials selection decisions.
- It's balanced. A variety of materials are presented to provide a broad overview of materials available to engineers.
- It's visual. This book strong use of visuals help students understand the concepts better than simply reading about them.
- Conversational Tone: The book is written in a conversational tone, designed to facilitate student learning. When I piloted the text in my Materials Science class, the anonymous comments from students included statements like "I didn't need to read it five times to start to understand it."
- Learning Objectives: Detailed learning objectives at the beginning of each chapter let the student know the specific goals of the chapter – what should you be able to do if you really understand the material.
- Homework Problems: The homework problems at the end of the chapter are a blend of numerical questions (Calculate the tensile strength of a 0.509 in<sup>2</sup> beam...) and more open-ended qualitative questions (Compare and contrast the advantages and disadvantages of fillings made from dental composites with those made from amalgam) that require a deeper understanding to answer (and are much harder to copy).

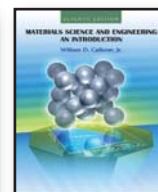
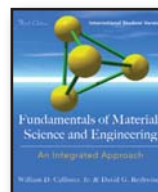
**Contents:** 1 Introduction. 2 Structure in Materials. 3 Measurement of Mechanical Properties. 4 Metals. 5 Polymers. 6 Ceramics and Carbon Materials. 7 Composites. 8 Electronic and Optical Materials. 9 Biomaterials and Biological Materials. What Types of Materials Interact with Biological Systems?

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Engineering Design Methods:  
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## Creative Design of Products and Systems

SAEED NIKU, California Polytechnic State University.

An exciting new title integrating all aspects of design into one volume.

Niku presents a cross-disciplinary approach to engineering design with a strong emphasis on creative thinking and problem-solving. By presenting a comprehensive, systematic approach, the text teaches the designer to understand the consequences of design decisions throughout the entire process.

### Features:

- The book covers creativity and the role of mental barriers in detail, demonstrated through puzzles, with many exercises and examples.
- Explores *Quality Function Deployment*, *Pugh matrix*, and other related issues through mechanical, electrical, and architectural examples.
- In-chapter creative problem solving exercises.

**Contents:** 1 Creative Product and System Design. 2 Creative Mind. 3 Reclaiming Your Creativity. 4 Creative Problem Solving Techniques. 5 The Design Process. 6 Imagination, Visualization, Graphical Representations and Communication. 7 Design Considerations, Decisions, and Consequences. 8 Human Factors in Design. 9 Aesthetics of Design. 10 Material Properties, Selection, and Processing. 11 Economics of Design. 12 Quality in Design. 13 Design and Product Liability. 14 Intellectual Property Protection. 15 Entrepreneurship and Innovation. 16 Design Analysis of Machine Components.

**Supplements:** Solutions Manual

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## A Guide to Writing as an Engineer

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Discover how to become a technical writing expert with this brief, easy-to-read guide.

This new title takes an "engineering approach" to technical communication that features practical examples and situations from today's industry.

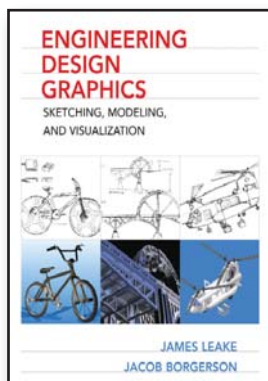
### Features:

- Introducing the concept of noise in communication rather than focusing on errors and poor writing.
- Examples from real engineering writing focus on the engineering discipline.
- Coverage of ethics, Engineering Codes of Ethics are introduced (IEEE and ABET).

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Engineers finally have an accessible resource that will enable them to create detailed engineering graphics.

*Engineering Design Graphics* provides a clear, concise treatment of the essential topics addressed in a modern engineering design graphics course. Projection theory provides the instructional framework, and freehand sketching the means for learning the important graphical concepts at the core of this work. The text includes several hundred sketching problems, all serving to develop the student's ability to use sketching for ideation and communication, as well as a means to develop critical spatial visualization skills. A chapter on computer-aided product design software, with an emphasis on parametric solid modeling, is also included.

### Features:

- Clear, concise, scaled-down approach eliminates rarely used material, distills important concepts to their essence, reflects learning approach of today's students.
- Establishes the connection between engineering graphics and computer graphics, as well as CAD.
- Presents a uniform treatment of projection theory enabling readers to develop higher order analysis skills.

**Contents:** 1 Engineering Design. 2 Sketching and Other Concepts 3 Planar Projections & Pictorial Views. 4 Multiviews. 5 Auxiliary and Section Views. 6 Dimensioning and Tolerancing. 7 Computer-Aided Product Design Software. 8 Working Drawings. 9 Product Dissection, Reverse Engineering and Redesign. Appendix A Perspective Projections & Sketches. B Geometric Dimensioning and Tolerancing

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The premiere reference on medical instrumentation as well as a comprehensive overview of the basic concepts.

This contributed book provides the premiere reference on medical instrumentation as well as a comprehensive overview of the basic concepts of medical instrumentation.

### Features:

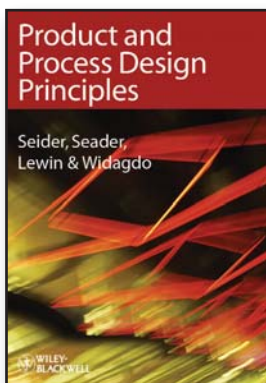
- New material on infant apnea monitors, impedance pneumography, the design of cardiac pacemakers, and disposable defibrillator electrodes and their standards.
- All chapters have been revised or shortened with most new material in medical imaging.
- Updated reference material covers latest medical technologies.
- Provides worked examples throughout the text and homework problems at the end of each chapter (more than 300).

**Contents:** 1 Basic Concepts of Medical Instrumentation. 2 Basic Sensors and Principles. 3 Amplifiers and Signal Processing. 4 The Origin of Biopotentials. 5 Biopotential Electrodes. 6 Biopotential Amplifiers. 7 Blood Pressure and Sound. 8 Measurement of Flow and Volume of Blood. 9 Measurements of the Respiratory System. 10 Chemical Biosensors. 11 Clinical Laboratory Instrumentation. 12 Medical Imaging Systems. 13 Therapeutic and Prosthetic Devices. 14 Electrical Safety. Appendices

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Process Control, 2e by SVRCEK,  
MAHONEY, YOUNG  
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## Product and Process Design Principles: Synthesis, Analysis and Design

3rd Edition

WARREN D. SEIDER, University of Pennsylvania, J. D. SEADER, University of Utah, DANIEL R. LEWIN, Israel Institute of Technology, SOEMANTRI WIDAGDO.

A complete package that describes modern strategies for the design of chemical products and processes, with an emphasis on a systematic approach.

This text and accompanying CD present the steps for designing chemical products and processes, beginning with societal needs.

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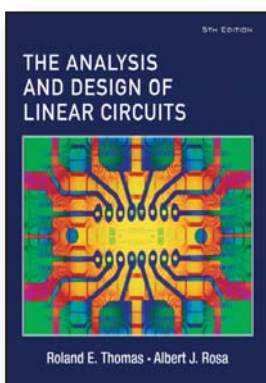
- Organization of text follows the key steps in product and process design, reflecting current practices and providing a sound, but flexible sequence of instruction.
- Process simulators, steady state, dynamic, and batch, are used throughout the textbook (ASPEN PLUS, HYSYS.Plant, CHEMCAD, PRO/II, BATCH PLUS, and SUPERPRO DESIGNER).

**Contents:** 1 Introduction to Chemical Product Design. 2 Product-Development Process. 3 Materials Technology for Basic Chemicals: Molecular-Structure Design. 4 Process Creation for Basic Chemicals. 5 Simulation to Assist in Process Creation. 6 Heuristics for Process Synthesis. 7 Reactor Design and Synthesis of Networks Containing Reactors. 8 Synthesis of Separation Trains. 9 Heat and Power Integration. 10 Mass Integration. 11 Optimal Design and Scheduling of Batch Processes. 12 Plantwide Controllability Assessment. 13 Basic Chemicals Product Design Case Studies. 14 Materials and Process/Manufacturing Technologies for Industrial Chemical Products. 15 Industrial Chemicals Product Design Case Studies. 16 Materials, Process/Manufacturing, and Product Technologies for Configured Consumer Products. 17 Configured Consumer Product Design Case Studies. 18 Heat Exchanger Design. 19 Separation Tower Design. 20 Pumps, Compressors, and Expanders. 21 Polymer Compounding. 22 Cost Accounting and Capital Cost Estimation. 23 Annual Costs, Earnings, and Profitability Analysis. 24 Design Optimization. 25 Six-Sigma Design Strategies. 26 Written Reports and Oral Presentations. Appendices

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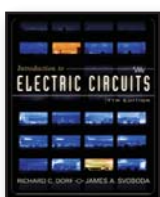
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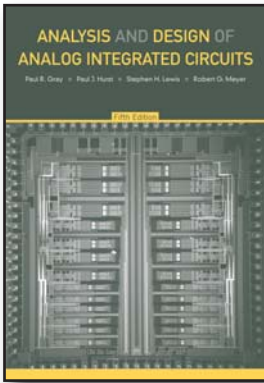
Text focuses on real-world applications and emphasizes the use of computers to assist the designer in his/her task.

### Features:

- Emphasis on computing tools. Includes examples, exercises and homework problems that use MATLAB, Excel and OrCAD have been greatly expanded.
- Each chapter has several learning objectives, supported by at least ten homework problems specifically designed to test the student's mastery of the objective.
- More than 70% of the homework problems are new or revised.

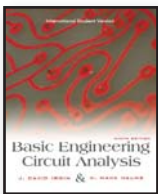
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## Analysis and Design of Analog Integrated Circuits

5th Edition

PAUL R. GRAY, University of California, BERKELEY PAUL J. HURST, University of California,  
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The only comprehensive book in the market covering CMOS, bipolar technologies, and BiCMOS integrated circuits.

The Fifth Edition provides a comprehensive treatment of analog integrated circuit analysis and design, starting from the basics and through current industrial practices.

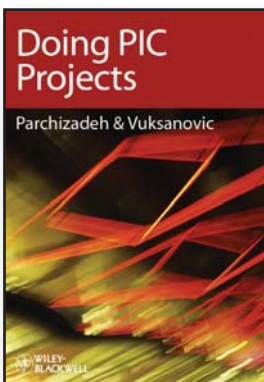
### Features:

- The authors combine bipolar, CMOS and BiCMOS analog integrated-circuit design into a unified treatment that stresses their commonalities and highlights their differences.
- Extensive use of SPICE computer programs and is an integral part of many examples in the problem sets.
- Streamlined and up-to-date coverage.

**Contents:** 1 Models for Integrated-Circuit Active Devices. 2 Bipolar, MOS, and BiCMOS Integrated-Circuit Technology. 3 Single-Transistor and Multiple-Transistor Amplifiers. 4 Current Mirrors, Active Loads, and References. 5 Output Stages. 6 Operational Amplifiers with Single-Ended Outputs. 7 Frequency Response of Integrated Circuits. 8 Feedback. 9 Frequency Response and Stability of Feedback Amplifiers. 10 Nonlinear Analog Circuits. 11 Noise in Integrated Circuits. 12 Fully Differential Operational Amplifiers

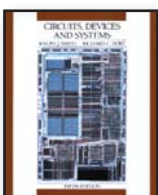
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£98.95/€120.00

## Doing PIC Projects

HASSAN PARCHIZADEH, Portsmouth University, BRANISLAY VUKSANOVIC, University of Portsmouth.

This highly practical book takes a hands on approach of completing PIC based projects, rather than theory.

*Doing PIC Projects* is a collection of projects based around various microcontrollers from the PIC family. On completion of this book, the reader should be able to design and build their own projects and solve other practical problems in digital electronics.

### Features:

- All projects in the book are fully tested, and are complete with detailed explanations and schematics to help the student assemble and test the program.
- A number of different types of PIC microcontroller of varying complexity are used for the projects in the book.

**Contents:** 1 Introduction. 2 Simple Interfaces. 3 Advanced Displays and Keyboards. 4 Analogue Interfaces. 5 More PIC Projects.

**Supplements:** A supporting website provides the diagrams and PCB layouts for the circuits used in the book, as well as links to all the support software required for assembly of the projects.

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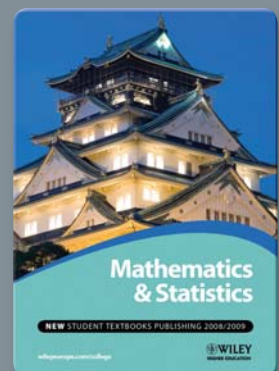
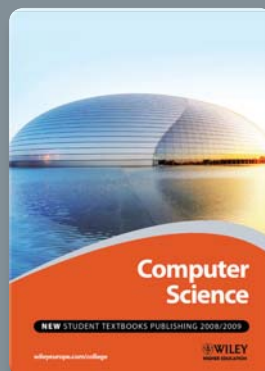
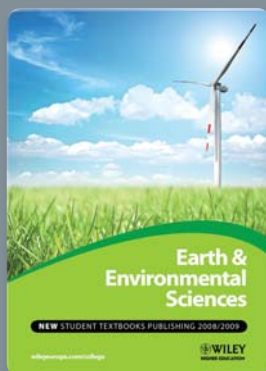
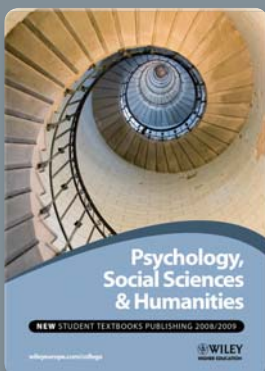
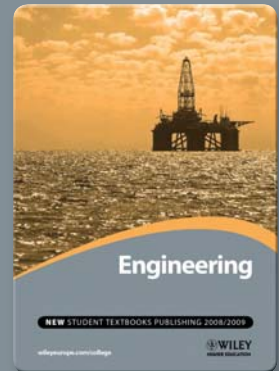
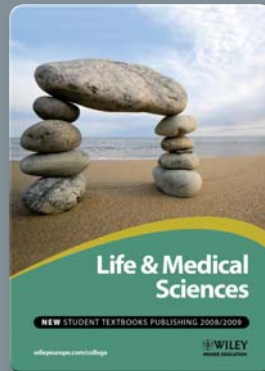
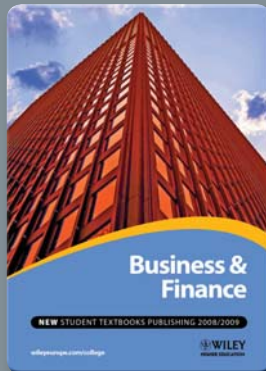
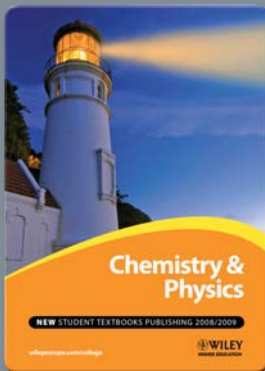
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