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‣ **Personalized Diagnostic and Learning Plan – LearnSmart**
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‣ **ConnectPlus eBooks**
  Connect reinvents the textbook learning experience for the modern student. Every Connect subject area is seamlessly integrated with ConnectPlus eBooks, which are designed to keep students focused on the concepts key to their success.
**Drawing Tool Problems**

- The power to electronically assign conceptual drawing problems.
- Students are able to interactively draw free body diagrams onscreen teaching them core concepts of understanding forces.

**Answer Palette Problems**

- Students symbolically solve-and-show an entire solution with an easy-to-use palette of control buttons.
- No special syntax or programming is necessary for the student to learn, allowing them to focus on problem solving.
- Students solve problems symbolically without numbers, building an understanding of various physics interactions occurring in the equations.

**Ranking Problems**

- Challenge student thinking on an entirely new level.
- Various choices or situations are presented, and the student must rank by simply clicking and dragging them into the proper order.
- Analyze critical-thinking skills undercover further potential learning opportunities.

**Dependent Multipart Problems**

- Allow students conceptual learning opportunities to work through problems step-by-step, and the reward of partial credit for all parts that they understand.
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- Instructors have the ability to share notes, highlights, bookmarks, figures and animations with their students.
- A powerful search function to pinpoint and connect key concepts in a snap!
- Pagination that exactly matches the printed text, allowing students to rely on Connect Plus as the complete resource for your course.

Learn and View Connect Demo at www.mcgrawhillconnect.com
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**Connect to Content:**
Simulation allows students to practice course critical content.

**Learn More Effectively:**
Personal learning path is created based upon student knowledge level.

**Anywhere, At Your Pace:**
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  - Reinforce learning after lecture
  - Prepare students for assignments and exams

Discover for yourself how the LearnSmart diagnostic ensures students will connect with the content, learn more effectively, and succeed in your course.

Visit [www.mhhe.com/learnsmart](http://www.mhhe.com/learnsmart) to view a demo.
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CONTROL SYSTEMS: Principles and Design
Third Edition
by M Gopal, Indian Institute of Technology (IIT, Delhi)
2008 / Softcover / 752 pages
ISBN: 9780070668799

http://highered.mcgraw-hill.com/sites/0070668795
(McGraw-Hill India Title)

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7. Compensator Designing Using Root Locus Plots
8. The Nyquist Stability Criterion and Stability Margin
9. Feedback Systems Performance Based on the Frequency Response
10. Compensator Design using Bode Plots
11. Digital Control Systems
12. Control System Analysis using State Variable Methods
13. Control Systems Design using State Variable Methods
14. Nonlinear systems

SCHAUM’S OUTLINE OF FEEDBACK AND CONTROL SYSTEMS
Second Edition
by Joseph DiStefano, University of California, Los Angeles; Allen Stubberud, UCLA; Ivan William, TRW Space and Technology
1990 / 572 pages
ISBN: 9780070170520
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Dynamics

ENGINEERING MECHANICS: DYNAMICS
by Michael Plesha, University of Wisconsin --- Madison, Gary Gray
Penn State Univ-Univ Park, and Francesco Costanzo, Penn State Univ-Univ Park

2010 (March 2009) / Hardcover / 784 pages
ISBN: 9780077275549
http://www.mhhe.com/pgc

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The first new mainstream text in engineering mechanics in nearly twenty years, Plesha, Gray, and Costanzo’s Engineering Mechanics: Statics and Dynamics will help your students learn this important material efficiently and effectively.

FEATURES
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- Real World Examples, Problems, Applications, Photographs, All
the photographs, applications, examples are from the real world, so that students will be able to identify circumstances that they encounter in their daily lives.

- Online Homework features selected problems from the text and algorithmically-generated problems that give the instructor a wide array of homework assignment options.

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Chapter 8 Energy and Momentum Methods for Rigid Bodies
Chapter 9 Mechanical Vibrations
Chapter 10 Three-Dimensional Dynamics of Rigid Bodies

Appendix A Mass Moments of Inertia
Appendix B Angular Momentum: Advanced Topics

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**ENGINEERING MECHANICS: STATICS AND DYNAMICS**

by Michael Plesha, University of Wisconsin --- Madison, Gary Gray

Penn State Univ-Univ Park, and Francesco Costanzo, Penn State Univ-Univ Park

2010 (March 2009) / Hardcover / 1376 pages

ISBN: 9780077302009

http://www.mhhe.com/pjc

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Appendix D Rotation Matrices and Angular Velocities
Appendix E Moments and Products of Inertia
NEW TO THIS EDITION

- Thoroughly Refreshed Problem Set in the Ninth Edition. 40% of the problems are updated from the previous edition.
- Online Homework specific to the text is provided. Many problems are algorithmically-generated giving the instructor a wide array of problems for assignment to students.

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Appendix C: Fundamentals of Engineering Examination

Dynamics (Intermediate)

INTERMEDIATE DYNAMICS
by Marcelo R M Crespo da Silva, Rensselaer Polytech Institute—Troy
2004 / 672 pages
ISBN: 9780072921885 (with CD) - Out of Print
ISBN: 9780071232364 [IE]
http://highered.mcgraw-hill.com/sites/0072921889/ CONTENTS

1) Essential material needed for dynamics
2) Kinematics and dynamics of point masses
3) Kinematic analysis of planar mechanisms
4) System of point masses: special dynamical properties
5) Dynamics of rigid bodies in simple planar motion
6) Introduction to dynamics of rigid bodies in general motion
7) Introduction to analytical dynamics
8) Vibrations & oscillations of dynamical systems
Appendix A: Simulink tutorial
Appendix B: Notes on sequential rotations, angular velocity, and acceleration
Appendix C: Properties of the inertia matrix of a body
Appendix D: Suggested computer lab assignments
Appendix F: Answers to selected problems
Appendix G: Some references for advanced studies
new mainstream text in engineering mechanics in nearly twenty years, Plesha, Gray, and Costanzo’s Engineering Mechanics: Statics and Dynamics will help your students learn this important material efficiently and effectively.

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NEW

VECTOR MECHANICS FOR ENGINEERS: STATICS
Ninth Edition
by Ferdinand P. Beer (deceased), E. Russell Johnston, Jr., University of Connecticut, and David Mazurek, U.S. Coast Guard Academy

2010 (January 2009) / Hardcover / 992 pages
ISBN: 9780077275563

www.mhhe.com/beerjohnston

Continuing in the spirit of its successful previous editions, the ninth edition of Beer, Johnston, Mazurek, and Cornwell’s Vector Mechanics for Engineers provides conceptually accurate and thorough coverage together with a significant refreshment of the exercise sets and online delivery of homework problems to your students. Nearly forty percent of the problems in the text are changed from the previous edition. The Beer/Johnston textbooks introduced significant pedagogical innovations into engineering mechanics teaching. The consistent, accurate problem-solving methodology gives your students the best opportunity to learn statics and dynamics. At the same time, the careful presentation of content, unmatched levels of accuracy, and attention to detail have made these texts the standard for excellence.

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Statistics and Dynamics

ENGINEERING MECHANICS: STATICS AND DYNAMICS
by Michael Plesha, University of Wisconsin – Madison, Gary Gray, Penn State Univ-Univ Park, and Francesco Costanzo, Penn State Univ-Univ Park

2010 (March 2009) / Hardcover / 1376 pages
ISBN: 9780077302009

http://www.mhhe.com/pgc

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ENGINEERING MECHANICS: STATICS AND DYNAMICS
by Nelson A, formerly with Dept of Mechanical Engineering, Aurora Engineering College, Andhra Pradesh

2009 (June 2009) / 860 pages
ISBN: 9780070146143
(McGraw-Hill India Title)
www.mhhe.com/nelsonem

Meant for the first year students of all engineering disciplines, this book on Engineering Mechanics covers statics and dynamics using the vector approach. It covers 100% syllabi of all major universities. In-depth explanations, varied solved examples with 3-dimensional diagrams make this a complete offering on the subject.

FEATURES
❖ In SI Units
❖ Follows the Vector Approach
❖ Excellent span of coverage: 100% syllabi coverage.
❖ Excellent depth of coverage: Detailed explanations supported with apt diagrammatic representations in a very organized manner render good understanding of the subject.
❖ Diagrams: Illustrious 3D diagrams help in clear understanding of the topics
Pedagogy :
❖ Solved Examples: 450
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❖ Objective type Questions: 140
A total of 1150 problems present in the book

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Instructors love Numerical Methods for Engineers because it makes teaching easy! Students love it because it is written for them—with clear explanations and examples throughout. The text features a broad array of applications that span all engineering disciplines. The sixth edition retains the successful instructional techniques of earlier editions. Chapra and Canale’s unique approach opens each part of the text with sections called Motivation, Mathematical Background, and Orientation. This prepares the student for upcoming problems in a motivating and engaging manner. Each part closes with an Epilogue containing Trade-Offs, Important Relationships and Formulas, and Advanced Methods and Additional References. Much more than a summary, the Epilogue deepens understanding of what has been learned and provides a peek into more advanced methods.

Approximately 20% of the problems are new or revised in this edition. The expanded breadth of engineering disciplines covered is especially evident in the problems, which now cover such areas as biotechnology and biomedical engineering.

Users will find use of software packages, specifically MATLAB®, Excel® with VBA and Mathcad®. This includes material on developing MATLAB® m-files and VBA macros.

NEW TO THIS EDITION

Approximately 20% of the problems are new or revised for this edition.

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1 Modeling, Computers, and Error Analysis
2 Programming and Software
3 Approximations and Round-Off Errors
4 Truncation Errors and the Taylor Series
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Engineering Mathematics

Features:
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- Solved Problems: 1575
- Practice Problems: 1622
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INTRODUCTION TO PROBABILITY AND STATISTICS: Principles and Applications for Engineering and the Computing Sciences

Fourth Edition
by J. Susan Milton, Radford University, and Jesse C. Arnold, Virginia Polytechnic Institute

2003 / Hardcover / 816 pages
ISBN: 9780072468366
ISBN: 9780071242486 [IE]

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AEROSPACE ENGINEERING

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13
Fluid Mechanics
(Introduction)

NEW TO THIS EDITION

* Bernoulli presentation was revised and moved to partner with linear momentum.
* New material on microflow concepts have been added.
* Over 200 new problems have been added throughout the text.
* Stimulating new contemporary examples, such as a flying car, kite-driven ships, a vehicle driven by a wind turbine, the Trans-Alaska Pipeline, and Rocket Man’s wings.
* Each group of problem assignments has a subheading explaining the topic.

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Chapter 5: Dimensional Analysis and Similarity
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Chapter 7: Flow Past Immersed Bodies
Chapter 8: Potential Flow and Computational Fluid Dynamics
Chapter 9: Compressible Flow
Chapter 10: Open-Channel Flow
Chapter 11: Turbomachinery

FLUID MECHANICS:
Fundamentals & Applications
Second Edition
by Yunus A. Cengel, University Of Nevada-Reno, and John M. Cimbala, Pennsylvania State University-University Park

2010 (January 2009) / Hardcover / 992 pages
ISBN: 9780077295462 (with Student Resources DVD)
http://www.mhhe.com/cengel

Fluid Mechanics: Fundamentals and Applications, communicates directly with tomorrow's engineers in a simple yet precise manner. The text covers the basic principles and equations of fluid mechanics in the context of numerous and diverse real-world engineering examples. The text helps students develop an intuitive understanding of fluid mechanics by emphasizing the physics, using figures, numerous photographs and visual aids to reinforce the physics.

NEW TO THIS EDITION

* 20% New homework problems.

FEATURES

* Four-Pronged Visual Approach: A four-pronged visual approach is incorporated into this fluids text and package. 1. There is an abundance of figures and diagrams incorporated in the text. 2. There is an abundance of photos, including images from Van Dyke's Album of fluid motion. 3. Fluid concept videos created by Gary Settles of Pennsylvania State University. 4. Numerous CFD animations for key fluid concepts.
* Intuitive Explanations used throughout, featuring everyday phenomena to show basic principles behind fluid mechanics.
* EES Problems included throughout the book, and marked with an EES icon; these are problems that are appropriate for computer solution, and set up to solved with the software package. The Student Resources CD ROM will carry scripted EES problem code and the "run-time" version of EES that readers can use to solve the problems, though it will not save or print. Full EES engine will be available to adopters to download; it will be renewed once a year (summer) with a new password.
* Design-Oriented Problems--each chapter problem set will include several problems that are open-ended, and require students to think beyond just getting a simple, numerical answer to the problem.
* Applied Problems will show fluid mechanics use in a number of disciplines, including ME, Civil, Environmental, Biomedical and Aerospace Engineering.
* FE Exam Questions will be included in the problem sets, and identified.
* Choice of SI alone or SI/English units. In recognition of the fact that English units are still widely used in some industries, both SI and English units are used in this text, with an emphasis on SI. Problems, tables, and charts in English units are designated by "E" after the number for easy recognition, and they can be ignored easily by SI users.
Whites Fluid Mechanics sixth edition will continue the text’s tradition of excellent problems of different types, precision and accuracy, and good application of concepts to engineering. The new 6th edition will feature the best general problem-solving approach to date, presented at the start of the book and carefully integrated in all examples. Students can progress from general ones to those involving design, multiple steps and computer usage. Word problems are included to build readers’ conceptual understanding of the subject, and FE Exam problems (in multiple-choice format) are included. EES (Engineering Equation Solver) software is included so that students can effectively use the computer to model, solve and modify typical fluid mechanics problems. A DVD containing EES is free with every book, and Appendix E describes its use and application to fluid mechanics. A limited version of EES, that does not expire, is included on the CD ROM; users of the book can also download and distribute the full Academic Version of EES, which is renewed annually with a new username and password. Also an animation library will be included as will an unlimited amount of problems, due to ARIJ.

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Index
In keeping with its bestselling previous editions, Fundamentals of Aerodynamics, Fifth Edition by John Anderson, offers the most readable, interesting, and up-to-date overview of aerodynamics to be found in any text.

The classic organization of the text has been preserved, as is its successful pedagogical features: chapter roadmaps, preview boxes, design boxes and summary section. Although fundamentals do not usually change over time, applications do and so various detailed content is modernized, and existing figures are replaced with modern data and illustrations. Historical topics, carefully developed examples, numerous illustrations, and a wide selection of chapter problems are found throughout the text to motivate and challenge students of aerodynamics.

NEW TO THIS EDITION

- A new “Design Box” dealing with a relatively new and very promising type of airplane configuration called the “Blended Wing-Body”, is included in Chapter 11 and is just one of many fundamental applications discussed in the book. It is based on NASA research and new Boeing design work among others, and could be the jet transport configuration of the future.

- A new historical note about the Swept Wing will also be added in Chapter 11. It will include new historical information on German research and development on Swept Wings that has just now come to light.

- The discussion of hypersonics in Chapter 14, “Elements of Hypersonic Flow” is extended to include another new Design Box focused on hypersonic waverider configurations. Hypersonic flight is in many respects the frontier of modern aerodynamics, and waveriders show great promise for future hypersonic vehicles, the experience of research carried out by the author and his students greatly enhance the discussion.

- New Applied Aerodynamics sections added for low-speed, high-speed, and high subsonic and supersonic airplanes including lift and drag characteristics and prediction.

- Close to 50% more worked examples will be added. Twice as many end of chapter problems will be added.

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AEROSPACE ENGINEERING

9 Linearized Flow
10 Conical Flow
11 Numerical Techniques for Steady Supersonic Flow
12 The Time Technique With Application to Supersonic Blunt Bodies and Nozzles
13 Three-Dimensional Flow
14 Transonic Flow
15 Hypersonic Flow
16 Properties of High-Temperature Gases
17 High-Temperature Flows: Basic Examples

Vibrations

International Edition

FUNDAMENTALS OF VIBRATIONS
by Leonard Meirowitch, Virginia Polytechnic Institute
2001 / 816 pages / Hardcover
ISBN: 978072881806
ISBN: 9780071181747 [IE]
www.mhhe.com/engcs/mee/mirowitch

Contents
1 Concepts from Vibrations
2 Response of Single-Degree-of-Freedom Systems to Initial Excitations
3 Response of Single-Degree-of-Freedom Systems to Harmonic and Periodic Excitations
4 Response of Single-Degree-of-Freedom Systems to Nonperiodic Excitations
5 Two-Degree-of-Freedom Systems
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7 Multi-Degree-of-Freedom Systems
8 Distributed-Parameter Systems: Exact Solutions
9 Distributed-Parameter Systems: Approximate Methods
10 The Finite Element Method
11 Nonlinear Oscillations
12 Random Vibrations
Appendix A: Fourier Series
Appendix B: Laplace Transformation
Appendix C: Linear Algebra

Dynamic Systems

SYSTEM DYNAMICS
Second Edition
by William J. Palm III

2010 (January 2009) / Hardcover / 944 pages
ISBN: 9780073529271
ISBN: 9780071267793 [IE]
www.mhhe.com/palm

System Dynamics includes the strongest treatment of computational software and system simulation of any available text, with its early introduction of MATLAB® and Simulink®. The text's extensive coverage also includes discussion of the root locus and frequency response plots, among other methods for assessing system behavior in the time and frequency domains as well as topics such as function discovery, parameter estimation, and system identification techniques, motor performance evaluation, and system dynamics in everyday life.

NEW TO THIS EDITION
- The author has edited two chapters for a more concise presentation of the review on dynamics (Ch. 2) and a more concise introduction to electrical systems (Ch. 6).
- Block diagrams, formerly in Chapter 5, are now presented in Chapter 9 to be closer to their applications in control system analysis. The material in Chapter 5 dealing with transfer functions and state variable methods has been reorganized to better delineate the advantages of each method.
- Introduction to MATLAB®, offered on the text website, provides readers with a practical, concise guide to the program.
- The former Chapter 11 has been split into two chapters to focus more concisely on PID control system design issues (new Chapter 11) and compensator design (new Chapter 12).

Contents
1 Introduction
2 Modeling of Rigid-Body Mechanical Systems
3 Solution Methods for Dynamic Models
4 Spring and Damper Elements in Mechanical Systems
5 State Variable Models
6 Electrical and Electromechanical Systems
7 Fluid and Thermal Systems
8 Frequency Response Methods
9 Transient Response and Block Diagram Methods
10 Introduction to Feedback Control
11 PID Control System Design
12 Compensator Design
13 Vibration Applications
Appendices
Introduction to MATLAB (on the website)
Guide to Selected MATLAB Commands and Functions
Numerical Methods (on the website)
Fourier Series.
AEROSPACE ENGINEERING

Performance Of Aircraft

International Edition

AIRCRAFT PERFORMANCE AND DESIGN
by John Anderson, University of Maryland, College Park
1999 / 672 pages / Hardcover
ISBN: 9780070019713
ISBN: 9780071160100 [IE]

CONTENTS
PART I: PRELIMINARY CONSIDERATIONS:
Chapter 1 The Evolution of the Airplane and its Performance: A Short History
Chapter 2 Aerodynamics of the Airplane: The Drag Polar
Chapter 3 Some Propulsion Characteristics
PART II: AIRPLANE PERFORMANCE:
Chapter 4 The Equations of Motion
Chapter 5 Airplane Performance: Steady Flight
Chapter 6 Airplane Performance: Accelerated Flight. PART III
AIRPLANE DESIGN:
Chapter 7 The Philosophy of Airplane Design
Chapter 8 Design of a Propeller-Driven Airplane
Chapter 9 Design of Jet-Propelled Airplanes
Postface
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Appendix A: Standard Altitude Table (SI Units)
Appendix B: Standard Altitude Table (English Engineering Units)

Finite Element Method

AN INTRODUCTION TO THE FINITE ELEMENT METHOD
Third Edition
by J.N. Reddy, Texas A&M University
2006 / 912 pages
ISBN: 9780072466850

www.mhhe.com/reddy3e

CONTENTS
1 Introduction
2 Mathematical Preliminaries, Integral Formulations, and Variational Methods
3 Second-order Differential Equations in One Dimension: Finite Element Models
4 Second-order Differential Equations in One Dimension: Applications
5 Beams and Frames
6 Eigenvalue and Time-Dependent Problems
7 Computer Implementation
8 Single-Variable Problems in Two Dimensions
9 Interpolation Functions, Numerical Integration, and Modeling Considerations
10 Flows of Viscous Incompressible Fluids
11 Plane Elasticity
12 Bending of Elastic Plates
13 Computer Implementation of Two-Dimensional Problems
14 Prelude to Advanced Topics

An Introduction to the Finite Element Method is organized and written in such a way that students should not find it difficult to understand the concepts and applications discussed in the book. Rigorous mathematical treatments and derivations are kept to a minimum. A consistent approach of finite element formulation and solution is used for every domain analysis described in the book. Plenty of simple examples are given to show students how to solve related problems. The exercises at the end of some chapters are within students’ capability and can be done without using a computer. Although this book is intended primarily for undergraduate students, it is also suitable for the early part of finite element courses in postgraduate programme. The basic and conceptual approaches which are used also make this book appropriate for practising engineers who want to know and learn the finite element method.

CONTENTS
Preface
1– Introduction
2– Linear Spring Elements and the Direct Equilibrium Method
3– Bar Element
4– Truss Elements
AEROSPACE ENGINEERING

Aviation Technology

International Edition

AIRCRAFT ELECTRICITY AND ELECTRONICS
Fifth Edition
by Thomas K Eismont
1995 / 384 pages
ISBN: 9780028018591
ISBN: 9780071132862 [IE]

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1. Fundamentals of Electricity
2. Applications of Ohm’s Law
3. Aircraft Storage Batteries
4. Wire and Wiring Practices
5. Electrical Control Devices
6. Digital Circuits
7. Alternating Current
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9. Electrical Measuring Instruments
10. DC Generators and Related Control Devices
11. Alternators, Inverters, and Related Controls
12. Power Distribution Systems
13. Design and Maintenance of AC Electrical Systems
14. Radio Theory
15. Communication and Navigation Systems
16. Weather Warning Systems
17. Electrical Instruments and Autopilot Systems

International Edition

AIRCRAFT POWERPLANT
Seventh Edition
by Michael J Kroes and Thomas W Wild, Aviation Technology, Purdue University
1995 / 656 pages
ISBN: 9780028018744
ISBN: 9780071134293 [IE]

CONTENTS
1. Aircraft Powerplant Classification and Progress
2. Reciprocating Engine Construction and Nomenclature
3. Internal Combustion Engine Theory and Performance
4. Lubricants and Lubricating Systems
5. Induction Systems, Superchargers, Turbochargers, and Exhaust Systems
6. Basic Fuel Systems and Carburetors
7. Fuel Injection Systems
8. Reciprocating Engine Ignition and Starting Systems
9. Operation, Inspection, Maintenance, and Troubleshooting of Reciprocating Engines
10. Reciprocating Engine Overhaul Practices
13. Turbine Engine Lubricants and Lubricating Systems
14. Ignition and Starting Systems for Gas-Turbine Engines
15. Turboprop Engines
16. Turboprop Engines
17. Turboshaft Engines
18. Gas-Turbine Operation, Inspection, Troubleshooting, Maintenance, and Overhaul
19. Propeller Theory, Nomenclature, and Operation
20. Turbopropellers and Control Systems
21. Propeller Installation, Inspection, and Maintenance
22. Engine Control, Indicating, and Warning Systems

International Edition

AIRCRAFT BASIC SCIENCE
Seventh Edition
by Michael J Kroes and J R Rardon, Aviation Technology, Purdue University
1993 / 448 pages
ISBN: 9780028018140
ISBN: 978001125178 [IE]

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1. Fundamentals of Mathematics
2. Science Foundations
3. Basic Aerodynamics
4. Airfoils and Their Applications
5. Aircraft in Flight
6. Aircraft Drawings
7. Weight and Balance
8. Aircraft Materials
9. Fabrication Techniques and Processes
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11. Hand Tools and Their Application
12. Aircraft Fluid Lines and Fittings
13. Federal Aviation Regulations and Publications
14. Ground Handling and Safety
15. Aircraft Inspection and Servicing
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International Edition

AIRCRAFT MAINTENANCE AND REPAIR
Sixth Edition
by Michael Kroes
1993 / Softcover
ISBN: 9780071129916 [IE]

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Hazardous Materials Safety Practices
Aircraft Structures
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Fabric Coverings
Aircraft Painting and Markings
Welding Equipment and Techniques
Welded Aircraft Structure Repair
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Sheet Metal Inspection and Repair
Plastics
Composite Materials
Assembly and Rigging
Aircraft Fluid Power Systems
Aircraft Landing Gear Systems
Aircraft Fuel Systems
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PLANNING AND DESIGN OF AIRPORTS
Fifth Edition
by Robert M. Horonjeff, deceased, Francis X. McKelvey, Michigan State University, William J. Sproule, and Seth Young
2010 (May 2010) / Hardcover / 748 pages / 272 illus
ISBN: 9780071446419
(A Professional Reference Title)

Fully updated to reflect the broad changes that have occurred in the aviation industry, the new edition of this classic text offers definitive guidance on every aspect of airport planning and design. Find unmatched coverage of the geometric design of landing areas, air traffic control systems, airport security, demand forecasting, airport financing, environmental assessment, terminal and ground access system planning, heliport and vertiport design, and much more.

Filled with example problems, detailed illustrations, up-to-date references, data tables, charts, and the latest thinking on key subjects, Planning and Design of Airports offers complete coverage of all the significant changes that have recently taken place in air traffic control, airport security, and aircraft navigation systems, particularly those utilizing the global positioning system.

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Chapter 1: The Nature of Civil Aviation
Chapter 2: Aircraft Characteristics Related to Airport Planning and Design
Chapter 3: Air Traffic Management
Chapter 4: Airport Planning Studies
Chapter 5: Forecasting for Airport Planning
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Chapter 8: Airport Lighting, Signing, and Marking
Chapter 9: Airport Drainage
Chapter 10: Planning and Design of Terminal Area
Chapter 11: Ground Access Planning
Chapter 12: Airport Security Planning
Chapter 13: Airport Capacity and Delay
Chapter 14: Airport Financial Planning
Chapter 15: Airport Environmental Planning

BASIC FLIGHT PHYSIOLOGY
Third Edition
by Richard O. Reinhart, M.D., Minnesota Air National Guard
2008 (October 2007) / Softcover / 311 pages / 90 illus
ISBN: 9780071494885
(A Trade & Technical Professional Title)

The Third Edition of Basic Flight Physiology has been completely updated and expanded with information on THAT WILL REDUCE PILOT IMPAIRMENT IN FLIGHT. This definitive guide to PHYSIOLOGICAL human factors in the flying environment provides a wealth of preventive measures pilots can take to anticipate and compensate for HUMAN FACTORS that cause 70% of all aviation accidents. Packed with over 100 INFORMATIVE illustrations, this resource contains UNDERSTANDABLE coverage of THE MANY PHYSIOLOGICAL FACTORS THAT AFFECT PILOT PERFORMANCE PLUS crew resource management, in-flight medical emergencies, health maintenance programs, and more.

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Chapter 9. Self-Imposed Medical Stresses
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Chapter 11. Sleep, Jet Lag, and Fatigue
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Chapter 14. Human Factors of Automation
Chapter 15. In-Flight Medical Emergencies
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Recommended resources for aerospace medicine and flight physiology
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AIM/FAR 2008
by Charles F. Spence
2008 (October 2007) / Softcover / 1002 pages / 200 illus
ISBN: 9780071499255
(A Professional Reference Title)

The only edited and annotated guide to federal aviation regulations, AIM/FAR 2008 arms you with the latest federally required rules for general aviation flying, including all new Transportation Security Administration requirements. This updated aviation tool presents new second-in-command qualifications, new helicopter procedures, SAAAR instrument approaches, key FAA regional office phone numbers, and unmanned aircraft alerts. Packed with over 200 detailed illustrations, this unrivaled resource contains an up-to-date aeronautical information manual, covering air navigation…lighting and visual aids…airspace…air traffic control and procedures…emergency procedures…safety of flight…medical facts…charts and publications…and helicopter operations. The book also provides selected aviation web sites, a pilot/controller glossary, and a comprehensive index.
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# NEW TITLES

## ARCHITECTURAL & URBAN ENGINEERING

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Landscape Architecture

CHANGING LANDSCAPES OF SINGAPORE
by Peggy Teo, Brenda Saw Ai Yee, Giok Ling Ooi, and Karen Peak Yue Lai
2005 / Softcover / 240 pages
ISBN: 9780071234795

(Assian Publication)

The transformations that have occurred in Singapore's landscape have been rapid since independence. Changing Landscapes of Singapore discusses these changes from the perspective of lived landscapes which have day-to-day meanings for Singaporeans. It begins with an exploration of the major physical changes resulting from rapid urbanisation and industrialisation and Singapore's attempt to balance the stresses of physical development with the needs of a green agenda. Several other themes relating to landscape change follow. A section on landscapes of community and nationhood investigates how issues concerning shelter (public housing), heritage conservation, street-names and national symbols affect Singaporean's notions of belonging. This is followed by a discussion on globalisation and the way it affects the nation-state's development. This section examines not only Singapore's efforts at regionalisation and its attempt to gain a better foothold in the workings of the global capitalist system but also evaluates the impacts of globalisation in the society. The last section on forgotten landscapes is a reminder of who and what may be left behind in striving for excellence. Landscapes reveal and reflect forgotten needs as much as they record what have been remembered and valued. The various strands are brought together in the final chapter where the landscape is used as a lens to raise questions on future challenges. While intended as a general text for university students, this book will also provide source materials for school teachers (junior college and upper secondary levels), the general population as well as the general reader interested in understanding the country's rapid landscape changes.

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2 Environmental Planning and Management
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6 Public Housing: The Housing of a Nation
7 Landscapes of Heritage: Historic and Cultural Districts
Part III: Landscapes of Globalisation
8 Achieving Global City Status: Industrial Restructuring and Regionalisation
9 Tourism Capital: Reinterpreting Tourism Space
10 Transnational Connectivities and Local Tensions
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12 Landscapes of Death: Cemeteries, Crematoria and Columbaria
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Structural Analysis

NEW

FUNDAMENTALS OF STRUCTURAL ANALYSIS
Fourth Edition
by Kenneth M. Leet, Northeastern University, Chia-Ming Uang, and Anne Gilbert, Speigel Zamecnik & Shah
2011 (February 2010) / Hardcover / 864 pages
ISBN: 9780073401096
ISBN: 9780071289382 [IE]

Fundamentals of Structural Analysis fourth edition, introduces engineering and architectural students to the basic techniques for analyzing the most common structural elements, including beams, trusses, frames, cables, and arches. The text covers the classical methods of analysis for determinate and indeterminate structures, and provides an introduction to the matrix formulation on which computer analysis is based.

FEATURES
- Design and layout has been improved to better illustrate example problems.
- The Solutions Manual has been revised and checked for accuracy.
- The text contains a highly detailed, realistic art program with fully drawn, practical illustrations.
- Website will contain solutions manual, image library, computer problem solutions, and RISA software.

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Chapter 1 Introduction
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Chapter 15 Approximate Analysis of Indeterminate Structures
Chapter 16 Introduction to the General Stiffness Method
Chapter 17 Matrix Analysis of Trusses by the Direct Stiffness Method
Chapter 18 Matrix Analysis of Beams and Frames by the Direct Stiffness Method
**FUNDAMENTALS OF STRUCTURAL ANALYSIS**

Third Edition

by Kenneth M. Leet, Northeastern University, Chia-Ming Uang, University Of California-San Diego, Anne Gilbert, Speigel Zamecnik & Shah

2008 (September 2006) / 784 pages / Hardcover

ISBN: 9780073305387

ISBN: 9780071259293 [IE]

www.mhhe.com/leet3e

Fundamentals of Structural Analysis, third edition introduces engineering and architectural students to the basic techniques for analyzing the most common structural elements, including beams, trusses, frames, cables, and arches. Leet et al cover the classical methods of analysis for determinate and indeterminate structures, and provide an introduction to the matrix formulation on which computer analysis is based. Third edition users will find that the text's layout has improved and the solutions manual has been typeset and carefully checked for accuracy.

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The text also presents the basic mechanics of structural concrete and methods for the design of individual members for bending, shear, torsion, and axial force, and provides detail in the various types of structural systems applications, including an extensive presentation of slabs, footings, foundations, and retaining walls.

NEW TO THIS EDITION

- Updated modified compression theory method of shear design from the AASHTO LRFD Bridge Design Specifications and modified shear friction design procedures the ACI (American Concrete Institute) Code added to Chapter 4.
- Updated homework problems.

CONTENTS

1 Introduction
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3 Flexural Analysis and Design of Beams
4 Shear and Diagonal Tension in Beams
5 Bond, Anchorage, and Developmental Length
6 Serviceability
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ARCHITECTURAL & URBAN ENGINEERING

STEELE STRUCTURES: BEHAVIOR AND LRFD
by Ramulu S Vinnakota, Marquette University
2006 / Hardcover / 928 pages
ISBN: 9780072366143
ISBN: 9780071131070 [IE]
www.mhhe.com/vinnakota

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1 Introduction
2 Steels
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8 Axially Loaded Columns
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10 Unbraced Beams
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12 Joints and Connecting Elements
13 Connections

DESIGN OF CONCRETE STRUCTURES
Thirteenth Edition
by Arthur H Nilson, Cornell University—Ithaca; David Darwin, University of Kansas—Lawrence and Charles W Dolan, University of Wyoming—Laramie
2004 / 896 pages / Hardcover
ISBN: 9780072483055 (Out-of-Print)
ISBN: 9780071232609 [IE]
http://highered.mcgraw-hill.com/sites/0072921994

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Website: www.mheducation.asia
Urban Planning

International Edition

URBAN TRANSPORTATION PLANNING
Second Edition
by Michael D. Meyer, Georgia Institute of Technology and Eric J. Miller, University of Toronto
2001 / 576 pages / Hardcover
ISBN: 978-0-07-242332-7 (Out of Print)
www.mhhe.com/engcs/civil/meyer

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2 System and Travel Characteristics
3 Decisionmaking
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6 Demand Analysis
7 Supply Analysis
8 Evaluation
9 Program and Project Implementation
10 Site Impact Analysis

Professional References

CONSTRUCTION DATABOOK
Construction Materials and Equipment
Second Edition
by Sidney M. Levy
2010 (March 2010) / Hardcover / 704 pages
ISBN: 9780071613576
(A Professional Reference Title)

This is a thorough revision of the all-inclusive compendium of con-
struction materials and equipment. Construction Databook, Second
Edition contains material specifications, installation instructions, and
answers to construction professionals’ day-to-day questions about
products and product usage. You will benefit from easy-to-access
information on application, selection, and dimensions of materials and
equipment for sub-structures, superstructures, building envelopes,
and Mechanical, Electrical, and Plumbing (MEP) components. New
details on sustainable construction materials and energy-saving
components is included. This book will save you time in narrowing
down the options when decisions must be made quickly.

CONTENTS
Section 1 Soils, Site Utilities, Sitework Equipment
Section 2 Sub-Structures
Section 3 The Building Envelope
Section 4 Carpentry, Framing, Drywall, Engineered Wood Products
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Section 6 Interior Finishes- Millwork, Laminates, Paint and Wall
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THE SMART GROWTH MANUAL
Andres Duany, Jeff Speck, and Mike Lydon
2010 (November 2009) / Softcover / 240 pages
ISBN: 9780071376754
(A Professional Reference Title)

From the authors of Suburban Nation, this full-color manual explains
how to implement the strategies of new urbanism, green design, and
urban sustainability. You will learn how to create and enhance mixed-
use, pedestrian-friendly communities as an alternative to suburban
sprawl. Sprawl, which evolved after World War II, is not a smart growth
system—it does not pay for itself financially; it consumes land at an
alarming rate; it produces transportation problems; and it promotes
social inequity.

The Smart Growth Manual presents a clear blueprint for develop-
ing cities and suburbs in the most user-friendly, cost-efficient, and
environmentally sustainable manner. The book covers preservation
of natural amenities and Leadership in Energy and Environmental
Design (LEED)-Neighborhood Development, and is lavishly illustrated
with important examples of built work by leading urban designers.

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Part 2: The Neighborhood
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Smart Growth Reading List; References)
ARCHITECTURAL & URBAN ENGINEERING

THE ARCHITECT'S PORTABLE HANDBOOK
First-Step Rules of Thumb for Building Design
Fourth Edition
John Patten ("Pat") Garrie
2010 (March 2010) / Softcover / 688 pages
ISBN: 9780071639156
(A Professional Reference Title)

This is a complete revision of the bestselling architect's quick guide to the latest code and cost information. The book presents the 20% of the data that architects need 80% of the time in the preliminary stage of designing buildings of all types and sizes—and of the spaces in between.

With a structure that parallels the progress of a typical architectural project, The Architect’s Portable Handbook, Fourth Edition delivers pertinent coverage—along with hundreds of detailed illustrations—of every step in the process: from initial planning and estimating through design and completion. The handbook is updated to reflect 2009 ICC International Building Code and the NFPA 5000 Building Code. To help you customize the book, pages for notes and/or changing data as experience dictates are included.

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LOCKSMITHING
Second Edition
Bill Phillips
2010 (January 2010) / Softcover / 400 pages
ISBN: 9780071622752
(A Professional Reference Title)

This completely revised resource offers a comprehensive step-by-step guide to locksmithing, covering everything from cutting keys to repairing pin tumbler locks to the latest information on standard and high-security locks and home automation. New chapters on selling and installing safes, drilling open safes, and bumping keys are also included. Details about licensing and certifications and a sample Registered Professional Locksmith exam round out the book.

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Chapter 2. Basic Types of Locks and Keys
Chapter 3. Key Blanks and Key Blank Directories
Chapter 4. Warded, Lever Tumbler, Disc Tumbler, and Side Bar Wafer Locks
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Chapter 6. Locksmithing Tools
Chapter 7. Key-in-Knob, Deadbolt, and Cylinder Key Mortise Locks
Chapter 8. High-Security Cylinders
Chapter 9. Pushbutton Combination Locks
Chapter 10. Lock Picking, Impressioning, and Forced Entry
Chapter 11. Masterkeying
Chapter 12 Safe Basics (new)
Chapter 13. Drilling Open Safes (new)
Chapter 14. Bumping Keys (new)
Chapter 15. Key Coding Machines
Chapter 16. Automotive Lock Servicing
Chapter 17. Closed Circuit Television Systems; Chapter 18. Access Control, Alarms, and Home Automation
Chapter 19. Working as a Locksmith
Chapter 20. Test Your Knowledge (revised)
Frequently Asked Questions
Glossary
Appendices: A. Lockset Function Charts; B. Comparative Key Blank List; C. Depth and Space Charts

BUILDING FOR BOOMERS
(McGraw-Hill Construction Series)
Judy Schriner
March 2010 / Hardcover / 320 pages
ISBN: 9780071599818
(A Professional Reference Title)

Building for Boomers provides up-to-date data and interpretation on housing trends that will help you design homes to meet the needs of aging baby boomers. This unique design and construction resource brings together boomer demographic information and housing research from various sources. Included are before and after photos of renovated homes, communities, and facilities, as well as drawings and blueprints that can be used as design templates.

CONTENTS
Ch 1. Boomers: Who They Are, What They Want, Why You Should Care
Ch 2. Unexpected Challenges
Ch 3. Neighborhood Types
Ch 4. Aging in Place, Universal Design, Sustainability and Building Green
Ch 5. Technology Turns the Tide
Ch 6. Single Family Homes and Townhouses
Ch 7. Condos and Townhouses
Ch 8. The Design Process Step by Step
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Introduction: History of Construction

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design-build…green construction…and more.
insurance and bonds…renovation and demolition…costs…claims…
ing and procurement…subcontractors and the bidding process…

on testing…safety…logistics…building code compliance… schedul-
Urban construction projects. The authors present timely guidance

tables, and diagrams to clarify the critical issues involved in today’s
management tool uses numerous illustrations, photographs, charts,
properties, and many other topics. This indispensable construction
process, coordinating with utility companies, dealing with adjacent
information about working on small sites, public safety, the permit
management in urban environments. The book includes cutting-edge
wealth of proven solutions to the common problems of construction
ment experts, Urban Construction Project Management provides a
Filled with hands-on advice from two seasoned project manage-
ments. The hard costs associated with efficiency upgrades and
materials choices are also discussed.

CONTENTS
Ch. 1. The Sustainability Revolution
Ch. 2. The Challenge of Greenining Existing Buildings
Ch. 3. Markets for Greening Existing Buildings
Ch. 4. Understanding Green Buildings and Rating Systems
Ch. 5. The Business Case for Greening Existing Buildings
Ch. 6. Costs of Greening Existing Buildings
Ch. 7. Meeting the Energy Retrofit Challenge
Ch. 8. Greening Site Management and Reducing Water Use
Ch. 9. Greening the Inside of the Building
Ch. 10. LEED Certification Challenges and Approaches
Ch. 11. Lessons Learned: Ten Best Practices for Greening Existing Buildings
Ch. 12. Greening the Future
Ch. 13. Project Profiles (Success Stories)
Appendices (Certified LEED-EB Projects (All Versions); Energy Star and the EU’s Energy Performance in Building Directive; Interviewees; Rating System for Green Existing Buildings; Resources for Further Information)

Index

BE A SUCCESSFUL GREEN BUILDER
by R. Dodge Woodson
2009 (September 2008) / Softcover / 381 pages
ISBN: 9780071592611
(A Professional Reference Title)
Filled with environmentally friendly methods that reduce the impact of housing on natural areas, Be a Successful Green Builder contains everything needed to get started in the green building business and develop a thriving enterprise.
Successful contractor and bestselling author R. Dodge Woodson explains how to select green building products, understand zoning requirements associated with green building, write winning proposals, find suitable financing, and deal with brokers. He also reviews 20 key mistakes to avoid in building green.

CONTENTS
Chapter One: The Business of Green Building
Chapter Two: Setting Up Your Business Structure
Chapter Three: 20 Key Mistakes to Avoid When Becoming a Building Contractor
Chapter Four: Matching Green Projects with Suitable Locations
Chapter Five: Finding Financing the Easy Way
Chapter Six: Working from Home versus Setting Up an Office
Chapter Seven: Building on Speculation—the Risks and the Rewards
Chapter Eight: Working with Real-Estate Brokers
Chapter Nine: Finding and Selecting Green Building Products
Chapter Ten: Dealing with Subcontractors and Suppliers
Chapter Eleven: Preparing Winning Bids
Chapter Twelve: Using Sustainable Building Practices to Make More Money
Chapter Thirteen: Growing Your Business the Smart Way
Chapter Fourteen: Green Land Developing Could Double Your Income
Chapter Fifteen: Green Landscaping Tips That Sell Houses Fast
Appendix 1: Glossary of Green Words and Terms
Appendix 2: Time Saving Tips and Tables for Builders

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ARCHITECTURAL & URBAN ENGINEERING

GREENING EXISTING BUILDINGS
Jerry Yudelson
2010 (November 2009) / Hardcover / 336 pages
ISBN: 978-0-07-163832-6
(A Professional Reference Title)
This new GreenSource book explains how to transform existing buildings into more energy-efficient green buildings on conventional budgets. You can follow the process, step-by-step, through each phase of project design, construction, and operations.
Greening Existing Buildings features proven technologies and design methods, and shows you how to select and work with design and construction professionals in a cost-effective, mutually supportive way. The book highlights ten best practices for greening existing buildings, and includes 20 U.S. and international case studies of successful implementations. The hard costs associated with efficiency upgrades and materials choices are also discussed.

CONTENTS
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URBAN CONSTRUCTION PROJECT MANAGEMENT
(McGraw-Hill Construction Series)
by Richard Lambeck, RI, Project Management, Inc. and John Eschemuller, John Eschemuller Consulting Services, LLC
2009 (November 2008) / Hardcover / 480 pages
ISBN: 9780071544689
(A Professional Reference Title)
Filled with hands-on advice from two seasoned project manage-
ments. The book includes cutting-edge information about working on small sites, public safety, the permit process, coordinating with utility companies, dealing with adjacent properties, and many other topics. This indispensable construction management tool uses numerous illustrations, photographs, charts, tables, and diagrams to clarify the critical issues involved in today’s urban construction projects. The authors present timely guidance on testing…safety…logistics…building code compliance… scheduling and procurement…subcontractors and the bidding process… insurance and bonds…renovation and demolition…costs…claims… design-build…green construction…and more.

CONTENTS
Introduction: History of Construction
Chapter 1. Project Organization
Chapter 2. Risk Assessment and Problem Solving
Chapter 3. Testing and Quality Control

Chapter 4. Building Codes and Permits
Chapter 5. Safety
Chapter 6. Logistics
Chapter 7. Layouts and Surveying
Chapter 8. Drawings and Specifications
Chapter 9. Contracts
Chapter 10. Insurance and Bonds
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Chapter 12. Renovation and Demolition
Chapter 13. Meetings and Communications
Chapter 14. Project Documentation, Logs, and Reports
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Chapter 18. Claims and Dispute Resolutions
Chapter 19. Design-Build
Chapter 20. Requisitions
Chapter 21. Project Punch List and Close-Out
Chapter 22. Technology
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BE A SUCCESSFUL GREEN LAND DEVELOPER
by R. Dodge Woodson
2009 (November 2008) / Softcover / 360 pages
ISBN: 9780071592598
(A Professional Reference Title)
Bestselling author R. Dodge Woodson brings the growing number of options available for developing land without doing harm to natural areas. In this comprehensive guide, he explains how such building techniques will increase sales, improve the bottom line, and help sustain the environment. Be a Successful Green Land Developer addresses all the practical issues that arise when embarking upon green building projects. It explains every aspect of the subject, from getting started in the green building business to mastering green terminology to making money with green methods. Learn how to understand zoning requirements, covenants, and restrictions...write winning proposals...and expand business. The book also examines 20 common mistakes and how to avoid them.

Green construction is here to stay. Use Be a Successful Green Land Developer as a roadmap to profits and growth in this exciting new realm of business.

CONTENTS
Introduction
Chapter One. Why Should I Consider Green Land Development?
Chapter Two. Using Green Space to Make Big Bucks
Chapter Three. Building a Strong Development Team
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Chapter Six. Finding Suitable Development Property
Chapter Seven. What Makes a Project Viable
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Chapter Nine. Initial Investigations
Chapter Ten. Drainage Factors
Chapter Eleven. Soil Considerations
Chapter Twelve. Calculating Land Loss From Road Costs and Green Space
Chapter Thirteen. Flood Zones, Wetlands, and Other Deal-Stoppers
Chapter Fourteen. Projecting Profit Potential
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Chapter Eighteen. Supervising Your Site
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Appendix 1: Glossary of Green Words and Terms
Appendix 2: Time Saving Tips and Tables for Land Developers

GREEN BUILDING THROUGH INTEGRATED DESIGN (GREENSOURCE BOOKS)
by Jerry Yudelson
2009 (September 2008) / Hardcover / 261 pages
ISBN: 9780071546010
(A Professional Reference Title)
This comprehensive, well-illustrated guide covers the entire process of building a certified green building. It offers expert insight into tackling various projects, from concept and design, to unifying members of the team, to constructing high-performance buildings on time and within budget.

Written by one of the building industry’s foremost experts in this area, Green Building Through Integrated Design includes case studies of a number of projects in North America. The book features interviews with key players to illuminate the integrated design process, including relevant issues, difficult challenges, and problem-solving techniques. Green Building Through Integrated Design is the most complete overview of green building project delivery methods available, and is a thorough blueprint that every member of the project team will find invaluable.

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Chapter 1. The Recipe for Success in High-Performance Projects
Chapter 2. Green Buildings Today
Chapter 3. The Practice of Integrated Design
Chapter 4. The Eco-Charrette
Chapter 5. Barriers to High-Performance Buildings: Why Some Projects Succeed and Others Fail
Chapter 6. The Business Case for Green Buildings
Chapter 7. Costs of Green Buildings
Chapter 8. Integrated Project Management--Cost/Benefit Analysis of Green Buildings
Chapter 9. Getting Started--Pre-design Considerations
Chapter 10. Conceptual and Schematic Design
Chapter 11. Design Development
Chapter 12. Construction Documents Phase
Chapter 13. Construction and Operations
Chapter 14. Looking Ahead--Designing Living Buildings
Appendix A: Integrated Design Resources

GREENING YOUR HOME
by Clayton Bennett
2008 / Softcover / 153 pages
ISBN: 9780071499095
(A Professional Reference Title)
A vital conservation and money-saving tool, Greening Your Home provides helpful information that will help you select sustainable green options that match your specific needs for every system in your house. This “one-stop” guide provides the latest information on systems and materials that conserve resources for a cleaner, more energy-efficient home.

From the lively writing, with illustrations and examples, you will learn how to incorporate sustainability into your house in beautiful, cost-effective, and environmentally responsible ways. Both inspirational and practical, Greening Your Home features:

❖ A wealth of green building and remodeling options for homeowners
❖ Photographs and information on green products and systems and their advantages
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Chapter 22. Energy Sources
Chapter 23. Financial Incentives
Chapter 24. Cooperative Buying
Chapter 25. Agricultural Independence
Chapter 26. Eliminating Waste
Chapter 27. Reducing Waste
Chapter 28. Washing Up
Chapter 29. Second Chances
Chapter 30. Getting Outside

Land Development Handbook

Third Edition
by Dewberry & Davis (Design Firm)
2008 / Hardcover / 1135 pages
ISBN: 9780071494373
(A Professional Reference Title)

Land Development Handbook provides a step-by-step approach to any type of project, from rural greenfield development to suburban infill to urban redevelopment. With the latest information regarding green technologies and design, the book offers you a comprehensive look at the land-development process as a whole, as well as a thorough view of individual disciplines. Plus, a bonus color insert reveals the extent to which land development projects are transforming our communities!

Contents

Part I: Overview
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App. E. Water Supply and Treatment
App. F. Case Study: Merrifield Town Center
App. G. Technical Appendix

Optical System Design

Second Edition
by Robert F. Fischer
2008 (December 2007) / Hardcover / 624 pages / 300 Illus
ISBN: 9780071472487
(A Professional Reference Title)

Honed for more than 20 years in an SPIE professional course taught by renowned optical systems designer Robert E. Fischer, Optical System Design, Second Edition brings you the latest cutting-edge design techniques and more than 400 detailed diagrams that clearly illustrate every major procedure in optical design. This thoroughly updated resource helps you work better and faster with computer-aided optical design techniques, diffractive optics, and the latest applications, including digital imaging, telecommunications, and machine vision. No need for complex, unnecessary mathematical derivations—instead, you get hundreds of examples that break the techniques down into understandable steps.

Contents

Chapter 1: Basic Optics and Optical System Specifications
Chapter 2: Stops, Pupils, and Other Basic Principles
Chapter 3: Diffraction, Aberrations, and Image Quality
Chapter 4: Optical Path Difference
Chapter 5: Specific Geometrical Aberrations and How to Get Rid of Them
that buildings can be rated with LEED and their operations tracked for sustainability. The sustainability movement in architecture is gaining tremendous momentum every year, especially now that buildings are as attractive as they are sustainable. Emerald Architecture offers a full-color collection of 24 in-depth case studies of green buildings that are as attractive as they are sustainable.

SOLAR POWER IN BUILDING DESIGN
by Peter Gevorkian
2008 (September 2007) / Hardcover / 476 pages / 120 illus
ISBN: 9780071485630
(A Professional Reference Title)
Solar Power in Building Design is a complete guide to designing, implementing, and auditing energy-efficient, cost-effective solar power systems for residential, commercial, and industrial buildings. From basic theory through project planning, cost estimating, and manufacturing methods, this vital resource offers you everything needed for solar power design success. Filled with case studies and illustrations, this state-of-the-art design tool covers new solar technologies... design implementation techniques... energy conservation... the economics of solar power systems... passive solar heating power... and more.

CONSTRUCTION WATERPROOFING HANDBOOK
Second Edition
by Michael T. Kubal
2008 / Hardcover / 576 pages
ISBN: 9780071489737
(A Professional Reference Title)
Fully updated to include new techniques for mold remediation, Construction Waterproofing Handbook simplifies the critical task of keeping a building's envelope watertight. It begins with a tutorial on basic waterproofing concepts and materials, then moves on to the particulars of designing and installing systems in commercial, industrial, and residential structures. Written by a renowned expert and popular author on the subject, this comprehensive guide provides key information on such matters as quality assurance, admixtures, expansion joints, testing, and safety. Because of recent natural disasters, clients are more concerned with waterproofing than ever. Construction Waterproofing Handbook provides everything you'll need to complete the most demanding projects with confidence and within budget.

EMERALD ARCHITECTURE: CASE STUDIES IN GREEN BUILDING (GREENSOURCE)
by GreenSource Magazine
2008 / Hardcover / 166 pages
ISBN: 9780071544415
(A Professional Reference Title)
Turn to Emerald Architecture for a full-color collection of 24 in-depth case studies of sustainable structures and facilities.

Packed with more than 200 design-inspiring photos and illustrations, this beautiful architectural guide presents design data and specifications from a wide variety of projects, including schools, offices, labs, libraries, government buildings, and even a summer camp. A vital tool for everyone who wants to capitalize on the latest advances in sustainable design and construction, Emerald Architecture presents an abundance of "hard" information on the planning, design, and methods for green structures. The sustainability movement in architecture is gaining tremendous momentum every year, especially now that buildings can be rated with LEED and their operations tracked for effectiveness. However, the building industry is still in need of "hard" information about the planning, design, products, and methods for sustainable structures. In order to help meet this crucial need, Emerald Architecture offers a full-color collection of 24 in-depth case studies of green buildings that are as attractive as they are sustainable.

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ARCHITECTURAL FORENSICS

by Sam Kabha

2008 (February 2008) / Hardcover / 576 pages / 300 Illus
ISBN: 9780071498425

(A Professional Reference Title)

Architectural Forensics clearly defines the role, responsibilities, and essential work of forensic architects. This unique resource offers comprehensive coverage of building defects and failures, types of failure mechanisms, and job-critical tasks such as fieldwork, lab testing, formulating opinions, and providing expert testimony. Packed with 300 illustrations, in-depth case studies, and numerous sample documents, this vital reference takes you step-by-step through every phase of conducting investigations...diagnosing building failures...preventing and curing building defects...and reporting on findings. The book also includes strategies for avoiding liability and resolving disputes—potentially saving vast amounts of time and money.

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PART I: THEORY & APPLICATION
Chapter 1. Defining Architectural Forensics
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PART II: BUILDING SYSTEMS – DESIGN, EVALUATION & THE FORENSIC ARCHITECT
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PART III: BUILDING SYSTEMS AND OTHER ISSUES – FAILURES, CAUSES, PREVENTION, AND REMEDIATION
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Chapter 12. Plumbing Systems
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PART IV: THE FORENSIC CONSULTANT – INVESTIGATIVE TECHNIQUES, LITIGATION AND THE FINAL REPORT
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Appendix C: Exhibits (forms, letters, etc.)

SUSTAINABLE FACILITIES

by Keith Moskow

2008 (March 2008) / Hardcover / 224 pages
ISBN: 9780071494748

(A Professional Reference Title)

A vital working tool for all building professionals interested in green architecture and construction, Sustainable Facilities presents an in-depth look at 20 facilities that were designed for environmental organizations and were constructed and now operate using green building methods and materials. Featuring contributions by leading architects in green building, this expert resource examines each building from planning through operations—covering new construction, energy-efficient design, operational cost savings, historic preservation, renovation and expansion, land conservation, and LEED ratings.

Packed with 200 black & white and full-color illustrations, Sustainable Facilities takes readers through the Woods Hole Research Center...Chesapeake Bay Foundation Environmental Center...Conservation Law Foundation Headquarters...Marion Art and Environmental Center...Thoreau Center for Sustainability...California EPA Headquarters Building...Forestech Centre...and many other facilities.

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Chapter 6. Chesapeake Bay Foundation, Philip Merrill Environmental Center (Annapolis, MD)
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**NEW**

**THERMODYNAMICS**

An Engineering Approach with Student Resources DVD

Seventh Edition

by Yunus A. Cengel, University Of Nevada-Reno, and Michael A. Boles, NC State University-Raleigh

2011 (January 2010) / Hardcover

ISBN: 978007366742 (with Student Resources DVD)


www.mhhe.com/cengel

Thermodynamics Seventh Edition covers the basic principles of thermodynamics while presenting a wealth of real-world engineering examples so students get a feel for how thermodynamics is applied in engineering practice. This text helps students develop an intuitive understanding of thermodynamics by emphasizing the physics and physical arguments. Cengel/Boles explore the various facets of thermodynamics through careful explanations of concepts and its use of numerous practical examples and figures, having students develop necessary skills to bridge the gap between knowledge and the confidence to properly apply knowledge. The media package for this text is extensive, giving users a large variety of supplemental resources to choose from. A Student Resources DVD is packaged with each new copy of the text and contains the popular Engineering Equation Solver (EES) software. McGraw-Hill's new Connect is available to students and instructors. Connect is a powerful, web-based assignment management system that makes creating and grading assignments easy for instructors and learning convenient for students. It saves time and makes learning for students accessible anytime, anywhere. With Connect, instructors can easily manage assignments, grading, progress, and students receive instant feedback from assignments and practice problems.

**NEW TO THIS EDITION**

- A substantial portion of homework problems have been revised or are new to the seventh edition.
- Connect is a powerful, web-based assignment management system that makes creating and grading assignments easy for instructors and learning convenient for students. It saves time and makes learning for students accessible anytime, anywhere. With Connect, instructors can easily manage assignments, grading, progress, and students receive instant feedback from assignments and practice problems.

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Appendix 1 Property Tables and Charts (SI Units)
Appendix 2 Property Tables and Charts (English Units)

**THERMODYNAMICS: AN ENGINEERING APPROACH**

Sixth Edition

by Yunus A. Cengel, University Of Nevada-Reno, and Michael A. Boles, NC State University-Raleigh

2008 (September 2006) / Hardcover

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Appendix 1 Property Tables and Charts (SI Units)
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INTRODUCTION TO CHEMICAL ENGINEERING THERMODYNAMICS
Seventh Edition
by J M Smith, University of California, Davis; H C Van Ness, Rensselaer Polytechnic Institute; M Abbott, Rensselaer Polytechnic Institute
2005 / 768 pages / Hardcover
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SCHAUM’S OUTLINE OF THERMODYNAMICS FOR ENGINEERS
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Environmental

International Edition

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Second Edition
by Mackenzie L. Davis, Michigan State University-East Lansing, and Susan J. Masten, McMaster University
2009 / Hardcover / 736 pages / 398 illus
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Principles of Environmental Engineering is intended for a course in introductory environmental engineering for sophomore- or junior-level students. The emphasis of this text is on engineering principles rather than on engineering design. Students should understand such calculus topics as differentiation, integrations, and differential equations. Principles places more emphasis on scientific principles, ethics, and safety, and focuses less on engineering design. The text exposes students to a broader range of environmental topics through separate chapters on ecosystems, geological and soil resources, and agricultural effects. This new edition includes a new chapter on Biology, updated science and technology discussions to reflect the latest trends and new case studies in each chapter.

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Appendix A: Properties of Air, Water, and Selected Chemicals
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SMALL AND DECENTRALIZED WASTEWATER MANAGEMENT SYSTEMS
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1998 / 600 pages
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HAZARDOUS WASTE MANAGEMENT
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2000 / 608 pages
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by George Tchobanoglous, University of California at Davis; Hilary Theisen, Brown and Caldwell Consulting Engineers; Samuel A. Vigil, California Polytechnic State University
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Fluid Mechanics
(Introduction)

FLUID MECHANICS
Seventh Edition
Frank M. White, University Of Rhode Island-Kingston
2011 (February 2010) / Hardcover / 896 pages
ISBN: 9780073529349
www.mhhe.com/white7e

The seventh edition of White's Fluid Mechanics offers students a clear and comprehensive presentation of the material that demonstrates the progression from physical concepts to engineering applications and helps students quickly see the practical importance of fluid mechanics fundamentals. The wide variety of topics gives instructors many options for their course and is a useful resource to students long after graduation. The book's unique problem-solving approach is presented at the start of the book and carefully integrated in all examples. Students can progress from general ones to those involving design, multiple steps and computer usage.

NEW TO THIS EDITION
- Bernoulli presentation was revised and moved to partner with linear momentum.
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Chapter 8: Potential Flow and Computational Fluid Dynamics
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Fluid Mechanics: Fundamentals and Applications, communicates directly with tomorrow's engineers in a simple yet precise manner. The text covers the basic principles and equations of fluid mechanics in the context of numerous and diverse real-world engineering examples. The text helps students develop an intuitive understanding of fluid mechanics by emphasizing the physics, using figures, numerous photographs and visual aids to reinforce the physics.

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- Design-Oriented Problems--each chapter problem set will include several problems that are open-ended, and require students to think beyond just getting a simple, numerical answer to the problem.
- Applied Problems will show fluid mechanics use in a number of disciplines, including ME, Civil, Environmental, Biomedical and Aerospace Engineering.
- FE Exam Questions will be included in the problem sets, and identified.
- Choice of SI alone or SI/English units. In recognition of the fact that English units are still widely used in some industries, both SI and English units are used in this text, with an emphasis on SI. Problems, tables, and charts in English units are designated by "E" after the number for easy recognition, and they can be ignored easily by SI users.
Whites Fluid Mechanics sixth edition will continue the text's tradition of excellent problems of different types, precision and accuracy, and good application of concepts to engineering. The new 6th edition will feature the best general problem-solving approach to date, presented at the start of the book and carefully integrated in all examples. Students can progress from general ones to those involving design, multiple steps and computer usage. Word problems are included to build readers' conceptual understanding of the subject, and FE Exam problems (in multiple-choice format) are included. EES (Engineering Equation Solver) software is included so that students can effectively use the computer to model, solve and modify typical fluid mechanics problems. A DVD containing EES is free with every book, and Appendix E describes its use and application to fluid mechanics. A limited version of EES, that does not expire, is included on the CD ROM; users of the book can also download and distribute the full Academic Version of EES, which is renewed annually with a new username and password. Also an animation library will be included as will an unlimited amount of problems, due to ARIS.

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2,500 SOLVED PROBLEMS IN FLUID MECHANICS AND HYDRAULICS
1989 / Softcover / 800 pages
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Numerical Methods

International Edition

NUMERICAL METHODS FOR ENGINEERS
Sixth Edition
by Steven C. Chapra, Tufts University, and Raymond P. Canale, Emeritus University of Michigan

2010 (April 2009) / Hardcover / 960 pages
ISBN: 9780073401065
ISBN: 9780071267595 [IE]
www.mhhe.com/chapra

Instructors love Numerical Methods for Engineers because it makes teaching easy! Students love it because it is written for them—with clear explanations and examples throughout. The text features a broad array of applications that span all engineering disciplines. The sixth edition retains the successful instructional techniques of earlier editions. Chapra and Canale's unique approach opens each part of the text with sections called Motivation, Mathematical Background, and Orientation. This prepares the student for upcoming problems in a motivating and engaging manner. Each part closes with an Epilogue containing Trade-Offs, Important Relationships and Formulas, and Advanced Methods and Additional References. Much more than a summary, the Epilogue deepens understanding of what has been learned and provides a peek into more advanced methods. Approximately 20% of the problems are new or revised in this edition. The expanded breadth of engineering disciplines covered is especially evident in the problems, which now cover such areas as biotechnology and biomedical engineering. Users will find use of software packages, specifically MATLAB®, Excel® with VBA and Mathcad®. This includes material on developing MATLAB® m-files and VBA macros.

NEW TO THIS EDITION

- Approximately 20% of the problems are new or revised for this edition.
- Challenging problems drawn from all engineering disciplines are included in the text.
- Chapra is known for his clear explanations and elegantly rendered examples.
- Users will have access to a book specific website which will house Instructor's Solutions Manual, PowerPoint slides of all text figures, M-Files, general textbook information and more!

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International Edition

APPLIED NUMERICAL METHODS WITH MATLAB FOR ENGINEERS AND SCIENTISTS
Second Edition
by Steven C. Chapra, Tufts University
2008 (November 2006) / Hardcover / 544 pages
ISBN: 9780073132907
ISBN: 9780071259217 [IE]
www.mhhe.com/chapra

Steven Chapra’s second edition, Applied Numerical Methods with MATLAB for Engineers and Scientists, is written for engineers and scientists who want to learn numerical problem solving. This text focuses on problem-solving (applications) rather than theory, using MATLAB, and is intended for Numerical Methods users; hence theory is included only to inform key concepts. The second edition feature new material such as Numerical Differentiation and ODE’s: Boundary-Value Problems. For those who require a more theoretical approach, see Chapra’s best-selling Numerical Methods for Engineers, 5/e (2006), also by McGraw-Hill.

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UNIT OPERATIONS IN CHEMICAL ENGINEERING
Seventh Edition
by Warren McCabe (deceased); Julian Smith, Cornell University; Peter Harriss, Cornell University
2005 / 1,152 pages / Hardcover /
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ISBN: 9780071247108 [IE]
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OPTIMIZATION OF CHEMICAL PROCESSES
Second Edition
by T. F. Edgar, and D. M. Himmelblau, both at the University of Texas at Austin
2001 / 672 pages / Hardcover
ISBN: 9780070393592 (Out-of-Print)
ISBN: 9780071189774 [IE]
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Process Control

PROCESS SYSTEMS ANALYSIS AND CONTROL
Third Edition
by Donald R. Coughanowr, Drexel University, and Steven LeBlanc, University of Toledo—Toledo
2009 (October 2008) / Hardcover / 624 pages
ISBN: 9780073397894
ISBN: 9780071121866 [IE]

www.mhhe.com/coughanowr-leblanc

Process Systems Analysis and Control, third edition retains the clarity of presentation for which this book is well known. It is an ideal teaching and learning tool for a semester-long undergraduate chemical engineering course in process dynamics and control. It avoids the encyclopedic approach of many other texts on this topic. Computer examples using MATLAB® and Simulink® have been introduced throughout the book to supplement and enhance standard hand-solved examples. These packages allow the easy construction of block diagrams and quick analysis of control concepts to enable the student to explore “what-if” type problems that would be much more difficult and time consuming by hand.

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20 Design of Digital Compensators

International Edition

MASS TRANSFER OPERATIONS
Third Edition
by Robert E. Treybal, deceased, formerly of The University of Rhode Island
1980 / 800 pages
ISBN: 9780070651763 (Out-of-Print)
ISBN: 9780070666153 [IE]

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Distillation

International Edition

CONCEPTUAL DESIGN OF DISTILLATION SYSTEMS
by Michael F. Doherty and Michael F. Malone, both of the University of Massachusetts, Amherst
2001 / 608 pages / Hardcover
ISBN: 9780072488630 (with CD-ROM) (Out of Print)

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Appendix D: Conversions of SI and US Customary Units
Appendix E: Examples of Commercially Available Simulators

Intro to Chemical Engineering

ENGINEERING CHEMISTRY
by B Sivasankar
2008 / Softcover / 592 pages
ISBN: 9780070669321
(McGraw-Hill India Title)
www.mhhe.com/sivasankar/ec

This book has been written for engineering students who are beginning a course of study in Machine Design. The approach of the book is to suggest and present short design problems or situations to illustrate the decision-making process without demanding an inordinate amount of the student’s precious time.

CONTENTS
1. Thermodynamics
2. Phase Rule
3. Solid State
4. Electrochemistry
5. Adsorption
6. Chemical Kinetics
7. Organic Reaction Mechanisms
8. Polymers
9. Chemical Methods of Analysis
10. Instrumental method of Analysis
11. Energy Sources
12. Chemistry for Engineering Materials
13. Corrosion and its Control
14. Water Treatment
15. Pollution of the Environment and its Control.

INTRODUCTION TO CHEMICAL PROCESSES
Principles, Analysis, Synthesis
by Regina M. Murphy, University of Wisconsin, Madison
2007 / Hardcover
ISBN: 9780072849608
ISBN: 9780071254298 [IE]
www.mhhe.com/murphy

CONTENTS
1. Converting the Earth’s Resources into Useful Products
4. Synthesis of Reactor Flowsheets and Selection of Process Conditions
5. Selection of Separation Technologies and Synthesis of Separation Flowsheets

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Engineering Mathematics

STATISTICS FOR ENGINEERS AND SCIENTISTS
Third Edition
by William Navidi, Colorado School Of Mines
2011 (February 2010) / Hardcover / 928 pages
ISBN: 9780073376332
ISBN: 9780071222051 [IE]
Statistics for Engineers and Scientists stands out for its crystal clear presentation of applied statistics. Suitable for a one or two semester course, the book takes a practical approach to methods of statistical modeling and data analysis that are most often used in scientific work.
Statistics for Engineers and Scientists features a unique approach highlighted by an engaging writing style that explains difficult concepts clearly, along with the use of contemporary real world data sets to help motivate students and show direct connections to industry and research. While focusing on practical applications of statistics, the text makes extensive use of examples to motivate fundamental concepts and to develop intuition.

NEW TO THIS EDITION
❖ Over 250 new problems have been added
❖ A new section was added on Tolerance and Prediction Intervals in Chapter 5; the discussion of controlled experiments and observational studies was added to Chapter 1; and confounding in controlled experiments was added in Chapter 7.
❖ A CONNECT site features power points, Datasets, image library, solutions, and algorithmic problems.

CONTENTS
Chapter 1: Sampling and Descriptive Statistics
Chapter 2: Probability
Chapter 3: Propagation of Error
Chapter 4: Commonly Used Distributions
Chapter 5: Confidence Intervals
Chapter 6: Hypothesis Testing
Chapter 7: Correlation and Simple Linear Regression
Chapter 8: Multiple Regression
Chapter 9: Factorial Experiments
Chapter 10: Statistical Quality Control
A Tables
B Partial Derivatives
C Suggestions for Further Reading
Answers to Selected Exercises

Materials Science (Introduction)

FOUNDATIONS OF MATERIALS SCIENCE AND ENGINEERING
Fifth Edition
William F. Smith, University Of Central Florida, and Javad Hashemi, Texas Tech University

2010 (April 2009) / Hardcover / 1056 pages
ISBN: 9780073529240

Smith/Hashemi's Foundations of Materials Science and Engineering, 5/e provides an eminently readable and understandable overview of engineering materials for undergraduate students. This edition offers a fully revised chemistry chapter and a new chapter on biomaterials as well as a new taxonomy for homework problems that will help students and instructors gauge and set goals for student learning. Through concise explanations, numerous worked-out examples, a wealth of illustrations & photos, and a brand new set of online resources, the new edition provides the most student-friendly introduction to the science & engineering of materials.

The extensive media package available with the text provides Virtual Labs, tutorials, and animations, as well as image files, case studies, FE Exam review questions, and a solutions manual and lecture PowerPoint files for instructors.

NEW TO THIS EDITION
❖ Fully revised Chemistry chapter and new material on Biomaterials.
❖ New/revised problems throughout.

CONTENTS
1 Introduction to Materials Science and Engineering
2 Atomic Structure and Bonding
3 Crystal and Amorphous Structures in Materials
4 Solidification, Crystalline Imperfections
5 Thermally Activated Processes and Diffusion in Solids
6 Mechanical Properties of Metals I
7 Mechanical Properties of Metals II
8 Phase Diagrams
9 Engineering Alloys
10 Polymeric Materials
11 Ceramics
12 Composite Materials
13 Corrosion
14 Electrical Properties of Materials
15 Optical Properties and Superconductive Materials
16 Magnetic Properties
17 Biological and Biomaterials
CHEMICAL ENGINEERING

International Edition

FOUNDATIONS OF MATERIALS SCIENCE AND ENGINEERING
Fourth Edition
by William Smith, University of Central Florida and Javad Hashemi, Texas Tech University
2006 / 928 pages / Hardcover
ISBN: 9780073107639 (with Student CD) - Out of Print
ISBN: 9780071256902 [IE with Student CD]
www.mhhe.com/smthmaterials

CONTENTS
1 Introduction to Materials Science and Engineering.
2 Atomic Structure and Bonding.
3 Crystal Structures and Crystal Geometry.
4 Solidification, Crystalline Imperfections, and Diffusion in Solids.
5 Mechanical Properties of Metals I.
6 Mechanical Properties of Metals II.
7 Polymetric Materials.
8 Phase Diagrams.
9 Engineering Alloys.
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14 Optical Properties and Superconductive Materials.
15 Magnetic Materials.
Appendix A Some Properties of Selected Elements.
Appendix B Ionic Radii of the Elements.
Appendix C Selected Physical Quantities and Their Units.
Appendix D Answers to Selected Problems.
Appendix E References for Further Study

WORKING GUIDE TO PROCESS EQUIPMENT
Third Edition
by Norman P. Lieberman
2008 (March 2008) / Hardcover / 600 pages
ISBN: 9780071496742

The Third Edition of what has become a classic in the field thoroughly explains everything you need to know to fully understand how process equipment works and effectively troubleshoot even the most complex process equipment problem. Drawing upon their decades of experience, the authors shed light on the inner workings of continuous process equipment for a broad range of industries, including such major ones as chemical, refining, pharmaceutical, and fertilizer. They include a wealth of diagnostic tips, practical examples, worked-out calculations, and up-to-date illustrations allowing readers to quickly and easily pinpoint and repair malfunctions.

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Chapter 2. How Trays Work: Dumping
Chapter 3. Why Control Tower Pressure
Chapter 4. What Drives Distillation Towers
Chapter 5. How Reboilers Work
Chapter 6. How Instruments Work
Chapter 7. Packed Towers: Better Than Trays?
Chapter 8. Steam and Condensate Systems
Chapter 9. Bubble Point and Dew Point
Chapter 10. Steam Strippers
Chapter 11. Draw-Off Nozzle Hydraulics
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Chapter 17. Steam Turbines
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Chapter 19. Shell-and-Tube Heat Exchangers
Chapter 21. Fired Heaters: Process Side
Chapter 22. Refrigeration Systems
Chapter 23. Centrifugal Pumps: Fundamentals of Operation
Chapter 24. Centrifugal Pumps: Driver Limits
Chapter 25. Centrifugal Pumps: Suction Pressure Limits
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Chapter 32. Corrosion: Process Units
Chapter 33. Fluid Flow in Pipes
Chapter 34. Super-Fractionation Separation Stage
Chapter 35. Computer Modeling and Control
Chapter 36. Field Troubleshooting Process Problems
OPERATION OF MUNICIPAL WASTEWATER TREATMENT PLANTS
Sixth Edition
by Water Environment Federation
2008 (October 2007) / Hardcover / 1296 pages / 328 illus
ISBN: 9780071543675
(A Professional Reference Title)
Operations of Municipal Wastewater Treatment Plants—MOP 11 is the industry flagship book, focusing on the operation and maintenance of municipal wastewater treatment plants. Presented in three shrinkwrapped, hardcover volumes, this classic resource incorporates the experiences, best practices, and innovations from thousands of wastewater plants. Taken as a whole, these three volumes represent the most complete package of information available to the wastewater treatment industry.

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VOLUME I
Introduction
Permit Compliance and Wastewater Treatment Systems
Fundamentals of Management
Industrial Waste and Pretreatment
Occupational Safety and Health
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Process Instrumentation
Pumping of Wastewater and Sludge
Chemical Storage, Handling, and Feeding
Electrical Distribution Systems
Utilities
Maintenance
Odor Control
Integrated Process Management
Contract Operations
Training

VOLUME II
Characterization and Sampling of Wastewater
Preliminary Treatment
Primary Treatment
Activated Sludge
Trickling Filters, Rotating Biological Contactors, and Combined Processes
Biological Nutrient Removal Processes
Natural Biological Processes
Physical-Chemical Treatment
Process Performance Improvements
Effluent Disinfection

VOLUME III
Management of Solids
Characterization and Sampling of Sludges and Residuals
Thickening
Anaerobic Digestion
Aerobic Digestion
Additional Stabilization Methods
Dewatering

SYNTHETIC FUELS HANDBOOK
by James Speight
2008 (May 2008) / Hardcover / 532 pages / 100 illus
ISBN: 9780071490238
(A Professional Reference Title)

CONTENTS
Fuel Sources—Conventional and Non-conventional
Natural Gas and Natural Gas Hydrates
Petroleum and Heavy Oil
Tar Sand Bitumen
Coal
Oil Shale
Synthesis gas
Crops
Wood Sources
Biomass
Industrial and Domestic Waste
Landfill Gas
Appendices

BIOFUELS REFINING AND PERFORMANCE
by Ahindra Nag
2008 (December 2007) / Hardcover / 448 pages
ISBN: 9780071489706
(A Professional Reference Title)
Written by a team of international experts, Biofuels Refining and Performance describes the refining processes and issues involved in producing fuel derived from recently living organisms or their by-products. Each chapter offers detailed discussion of theory as well as the actual experimental procedure used to economically manufacture biofuels on a commercial scale.

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Part One: Chemistry of Biofuels
Chapter 1. Energy and Its Biological Resources
Chapter 2. Photosynthetic Plants as Renewable Source of Energy
Chapter 3. Fuels from Biomass Conversion
Part Two: Biofuels Refining Processes
Chapter 4. Ethanol
Chapter 5. Methanol
Chapter 6. Biodiesel
Part Three: Performance Characteristics
Chapter 7. Use of alcohols to study the performance characteristics in Petrol and Diesel Engines
Chapter 8. Biofuel cells
Chapter 9. Soft / Decentralized renewables as an energy option for the developing countries
Rising fuel prices have created a surge in the worldwide demand for biofuels made from plant and animal feedstocks. Filled with a wealth of illustrations, Biofuels Engineering Process Technology fully explains the concepts, systems, and technology now being used to produce biofuels on both an industrial and small scale. Written by a team of leading biofuels experts, this lucid guide presents a complete introduction to biofuels and biorefining processes...state-of-the-art information on biofuels processed from fermentations of ethanol, hydrogen, microbial oils, and methane...new material on the production of biodiesel from plant and algal oils...and the use of microbial fuel cells to produce bioelectricity.

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The Engineering of Foundations presents the subject of foundation engineering in a logical framework, in a natural sequence and in as simple a presentation as possible. The text emphasizes conceptual understanding and avoids an oversimplified treatment of the subject. Estimation of soil parameters for use in design is given high priority. Users will find an up-to-date text that relates theory to real world practices and integrates concepts and continuity of examples across chapters. Illustrations, applications and hands-on examples are provided, to explain these critical foundations. Explains the “why”. One reviewer notes, “This is the Holtz and Kovacs of Foundations!!”

**CONTENTS**

1 The World Of Foundation Engineering
2 Foundation Design
3 Soils, Rocks, and Groundwater
4 Stress Analysis, Strain Analysis, and Shearing of Soils
5 Shear Strength and Stiffness of Sands
6 Consolidation, Shear Strength, and Stiffness of Clays
7 Site Exploration
8 Shallow Foundations in Soils: Types of Shallow Foundations and Construction Techniques
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10 Shallow Foundations: Limit Bearing Capacity
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Appendix E. Stress Rotation Analysis
Statics - Scalar

MECHANICS FOR ENGINEERS: STATICS
Fifth Edition
by Ferdinand P. Beer (deceased), and E. Russell Johnston, Jr. University of Connecticut
2008 (August 2007) / Hardcover / 480 pages
ISBN: 9780072464788
The first book published in the Beer and Johnston Series, Mechanics for Engineers: Statics is a scalar-based introductory statics text, ideally suited for engineering technology programs, providing first-rate treatment of rigid bodies without vector mechanics. This new edition provides an extensive selection of new problems and end-of-chapter summaries. The text brings the careful presentation of content, unmatched levels of accuracy, and attention to detail that have made Beer and Johnston texts the standard for excellence in engineering mechanics education.

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1 Introduction
2 Statics of Particles
3 Statics of Rigid Bodies in Two Dimensions
4 Statics of Rigid Bodies in Three Dimensions
5 Distributed Forces: Centroids and Centers of Gravity
6 Analysis of Structures
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9 Distributed Forces: Moments of Inertia
10 Method of Virtual Work
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Answers to Even-Numbered Problems

Statics

ENGINEERING MECHANICS: STATICS
by Michael Plesha, University of Wisconsin --- Madison, Gary Gray
Penn State Univ-Univ Park, and Francesco Costanzo, Penn State Univ-Univ Park
2010 (March 2009) / Hardcover / 704 pages
ISBN: 97800777275532
http://www.mhhe.com/jpc

Plesha, Gray, and Costanzo's Engineering Mechanics: Statics & Dynamics presents the fundamental concepts, clearly, in a modern context using applications and pedagogical devices that connect with today's students. The text features a five-part problem-solving methodology that is consistently used throughout all example problems. This methodology helps students lay out the steps necessary to correct problem formulation and explains the steps needed to arrive at correct and realistic solutions. Once students have fully mastered the basic concepts, they are taught appropriate use of modern computational tools where applicable. Further reinforcing the text's modern emphasis, the authors have brought engineering design considerations into selected problems where appropriate. This sensitizes students to the fact that engineering problems do not have a single answer and many different routes lead to a correct solution.

The first new mainstream text in engineering mechanics in nearly twenty years, Plesha, Gray, and Costanzo's Engineering Mechanics: Statics and Dynamics will help your students learn this important material efficiently and effectively.

FEATURES
- 5-Part Problem Solving Methodology used in all example problems. A consistent problem-solving approach is used throughout. Each example problem is solved using a "template" that helps students effectively set up the problem and solve it correctly.
- Introduces Appropriate Use of Computational Tools. Fundamental concepts are taught thoroughly, and the use of computational tools is taught when appropriate.
- Appropriate Design Coverage. The authors have brought engineering design considerations into selected problems where applicable. This will sensitize students to the fact that engineering problems do not have a single answer and many different routes lead to a correct solution.
- Real World Examples, Problems, Applications, Photographs. All the photographs, applications, examples are from the real world, so that students will be able to identify circumstances that they encounter in their daily lives.
- Online Homework features selected problems from the text and algorithmically-generated problems that give the instructor a wide array of homework assignment options.
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Chapter 5 Equilibrium of Bodies
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Chapter 10 Moments of Inertia

NEW
VECTOR MECHANICS FOR ENGINEERS: STATICS AND DYNAMICS
Ninth Edition
by Ferdinand P Beer (deceased), E Russell Johnston, Jr., University of Connecticut, Elliot R Eisenberg, Pennsylvania State University, and David Mazurek, U S Coast Guard Academy

2010 (February 2009) / Hardcover / 1376 pages
ISBN: 97800777275556
www.mhhe.com/beerjohnston

Continuing in the spirit of its successful previous editions, the ninth edition of Beer, Johnston, Mazurek, and Cornwell’s Vector Mechanics for Engineers provides conceptually accurate and thorough coverage together with a significant refreshment of the exercise sets and online delivery of homework problems to your students. Nearly forty percent of the problems in the text are changed from the previous edition. The Beer/Johnston textbooks introduced significant pedagogical innovations into engineering mechanics teaching. The consistent, accurate problem-solving methodology gives your students the best opportunity to learn statics and dynamics. At the same time, the careful presentation of content, unmatched levels of accuracy, and attention to detail have made these texts the standard for excellence.

NEW TO THIS EDITION

- Thoroughly Refreshed Problem Set in the Ninth Edition. 40% of the problems are updated from the previous edition.
- Online Homework specific to the text is provided. Many problems are algorithmically-generated giving the instructor a wide array of problems for assignment to students.

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4 Equilibrium of Rigid Bodies
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CIVIL ENGINEERING

VECTOR MECHANICS FOR ENGINEERS: STATICS
Eighth Edition
by Ferdinand P. Beer (deceased), E. Russell Johnston, Jr., University of Connecticut, Elliot R. Eisenberg, Pennsylvania State University and David Mazurek, U.S. Coast Guard Academy
2007 / Hardcover / 648 pages
www.mhhe.com/beerjohnston

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Answers to Problems

SCHAUM'S OUTLINE OF STATICS AND MECHANICS OF MATERIALS
by William Nash, University of Massachusetts
1992 / 288 pages
ISBN: 9780070458963
(A Schaum's Publication)

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2 Properties of Forces and Force Systems
3 Statics Equilibrium of Rigid Bodies
4 The Effects of Friction
5 Equilibrium of Bodies Subject to Three-Dimensional Force Systems
6 Trusses
7 Centroids, Moments of Inertia, and Distributed Loads
8 Axial Force, Twisting Moment, Shearing Force, and Bending Moment
9 Stress and Strain Analysis
10 Uniform Tension, Compression, and Shear
11 Thin Rings and Shells of Revolution
12 Torsion
13 Stresses in Beams
14 Beam Deflections
15 Combined Loadings, Theories of Failure, and Design Methodology
16 Columns
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700 SOLVED PROBLEMS IN VECTOR MECHANICS FOR ENGINEERS: DYNAMICS
by Joseph F. Shelley, Trenton State College
1991 / Softcover / 672 pages
ISBN: 9780070566873
(A Schaum's Publication)

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2 Dynamics of Particles
3 Kinematics of Plane Motion of a Rigid Body
4 Centroids, and Mass Moments of Inertia of Rigid Bodies
5 Dynamics of Rigid Bodies in Plane Motion
6 Work-Energy Solutions for Particles and Rigid Bodies
7 Impulse-Momentum Methods for Particles and Rigid Bodies
8 Rectilinear Motion of a Body with Resisting, or Drag, Forces
9 Rigid Bodies in Three-Dimensional Motion
10 Dynamic Unbalance, and Gyroscopic Moments

800 SOLVED PROBLEMS IN VECTOR MECHANICS FOR ENGINEERS, VOL. I: STATICS
by Joseph F. Shelley, Trenton State College
1990 / Softcover / 688 pages
ISBN: 9780070568358
(A Schaum's Publication)

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Introduction.
Operations with Forces.
Operations with Moments and Couples.
Fundamentals of Force Analysis.
Analysis of Two-Dimensional Force Systems.
Force Analysis of Plane Trusses.
Force Analysis of Plane Frames and Machine Analysis of Friction Forces.
Centroids of Plane Areas and Curves.
Moments and Products of Inertia of Plane Areas and Curves.
Distribution of Forces Along Lengths and Over Areas.
Analysis of Three-Dimensional Force Systems.
Appendices.
Index.
DYNAMICS - SCALAR

INTERNATIONAL EDITION

MECHANICS FOR ENGINEERS: DYNAMICS
Fifth Edition
by Ferdinand P. Beer (deceased), and E. Russell Johnston, Jr.
University of Connecticut
2008 (November 2007) / Hardcover / 512 pages
ISBN: 9780072464771
ISBN: 9780071275361 (SI units)

The first book published in the Beer and Johnston Series, Mechanics for Engineers: Dynamics is a scalar-based introductory dynamics text, ideally suited for engineering technology programs, providing first-rate treatment of rigid bodies without vector mechanics. This new edition provides an extensive selection of new problems and end-of-chapter summaries. The text brings the careful presentation of content, unmatched levels of accuracy, and attention to detail that have made Beer and Johnston texts the standard for excellence in engineering mechanics education.

CONTENTS
11 Kinematics of Particles
12 Kinetics of Particles: Newton’s Second Law
13 Kinetics of Particles: Work and Energy
14 Kinetics of Particles: Impulse and Momentum
15 Kinematics of Rigid Bodies
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CIVIL ENGINEERING

Dynamics - Scalar

NEW

ENGINEERING MECHANICS: DYNAMICS
by Michael Plesha, University of Wisconsin --- Madison, Gary Gray
Penn State Univ-Univ Park, and Francesco Costanzo
Penn State Univ-Univ Park

2010 (March 2009) / Hardcover / 784 pages
ISBN: 9780077275549
http://www.mhhe.com/pgc

Plesha, Gray, and Costanzo’s Engineering Mechanics: Statics & Dynamics presents the fundamental concepts, clearly, in a modern context using applications and pedagogical devices that connect with today’s students. The text features a five-part problem-solving methodology that is consistently used through all example problems. This methodology helps students lay out the steps necessary to correct problem-formulation and explains the steps needed to arrive at correct and realistic solutions. Once students have fully mastered the basic concepts, they are taught appropriate use of modern computational tools where applicable. Further reinforcing the text’s modern emphasis, the authors have brought engineering design considerations into selected problems where appropriate. This sensitizes students to the fact that engineering problems do not have a single answer and many different routes lead to a correct solution.

The first new mainstream text in engineering mechanics in nearly twenty years, Plesha, Gray, and Costanzo’s Engineering Mechanics: Statics and Dynamics will help your students learn this important material efficiently and effectively.

FEATURES
✓ 5-Part Problem Solving Methodology used in all example problems. A consistent problem-solving approach is used throughout. Each example problem is solved using a “template” that helps students effectively set up the problem and solve it correctly.
✓ Introduces Appropriate Use of Computational Tools. Fundamental concepts are taught thoroughly, and the use of computational tools is taught when appropriate.
✓ Appropriate Design Coverage. The authors have brought engineering design considerations into selected problems where applicable. This will sensitize students to the fact that engineering problems do not have a single answer and many different routes lead to a correct solution.
✓ Real World Examples, Problems, Applications, Photographs. All the photographs, applications, examples are from the real world, so that students will be able to identify circumstances that they encounter in their daily lives.
✓ Online Homework features selected problems from the text and algorithmically-generated problems that give the instructor a wide array of homework assignment options.

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Chapter 1 Setting the Stage for the Study of Dynamics
Chapter 2 Particle Kinematics

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Chapter 3 Force and Acceleration Methods for Particles
Chapter 4 Energy Methods for Particles
Chapter 5 Momentum Methods for Particles
Chapter 6 Planar Rigid Body Kinematics
Chapter 7 Newton-Euler Equations for Planar Rigid Body Motion
Chapter 8 Energy and Momentum Methods for Rigid Bodies
Chapter 9 Mechanical Vibrations
Chapter 10 Three-Dimensional Dynamics of Rigid Bodies
Appendix A Mass Moments of Inertia
Appendix B Angular Momentum: Advanced Topics

Chapter 3 Force and Acceleration Methods for Particles

Chapter 4 Energy Methods for Particles

Chapter 5 Momentum Methods for Particles

Chapter 6 Planar Rigid Body Kinematics

Chapter 7 Newton-Euler Equations for Planar Rigid Body Motion

Chapter 8 Energy and Momentum Methods for Rigid Bodies

Chapter 9 Mechanical Vibrations

Chapter 10 Three-Dimensional Dynamics of Rigid Bodies

Appendix A Mass Moments of Inertia

Appendix B Angular Momentum: Advanced Topics

2010 (March 2009) / Hardcover / 1376 pages
ISBN: 9780077302009

http://www.mhhe.com/pge

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The first new mainstream text in engineering mechanics in nearly twenty years, Plesha, Gray, and Costanzo’s Engineering Mechanics: Statics and Dynamics will help your students learn this important material efficiently and effectively.

FEATURES

❖ 5-Part Problem Solving Methodology used in all example problems. A consistent problem-solving approach is used throughout. Each example problem is solved using a “template” that helps students effectively set up the problem and solve it correctly.

❖ Introduces Appropriate Use of Computational Tools. Fundamental concepts are taught thoroughly, and the use of computational tools is taught when appropriate.

❖ Appropriate Design Coverage. The authors have brought engineering design considerations into selected problems where applicable. This will sensitize students to the fact that engineering problems do not have a single answer and many different routes lead to a correct solution.

❖ Real World Examples, Problems, Applications, Photographs. All the photographs, applications, examples are from the real world, so that students will be able to identify circumstances that they encounter in their daily lives.

❖ Online Homework features selected problems from the text and algorithmically-generated problems that give the instructor a wide array of homework assignment options.

CONTENTS

STATICS
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Chapter 2 Vectors: Force and Position
Chapter 3 Equilibrium of Particles
Chapter 4 Moment of a Force and Equivalent Force Systems
Chapter 5 Equilibrium of Bodies
Chapter 6 Structural Analysis and Machines
Chapter 7 Centroids and Distributed Force Systems
Chapter 8 Internal Forces
Chapter 9 Friction
Chapter 10 Moments of Inertia

DYNAMICS
Chapter 1 Setting the Stage for the Study of Dynamics
Chapter 2 Particle Kinematics
Chapter 3 Force and Acceleration Methods for Particles
Chapter 4 Energy Methods for Particles
Chapter 5 Momentum Methods for Particles
Chapter 6 Planar Rigid Body Kinematics
Chapter 7 Newton-Euler Equations for Planar Rigid Body Motion
Chapter 8 Energy and Momentum Methods for Rigid Bodies
Chapter 9 Mechanical Vibrations
Chapter 10 Three-Dimensional Dynamics of Rigid Bodies
Appendix A Mathematical Essentials
Appendix B Differential Equations and Mathematical Software
Appendix C Intrinsic Description of Motion
Appendix D Rotation Matrices and Angular Velocities
Appendix E Moments and Products of Inertia

INVITATION TO PUBLISH

McGraw-Hill is interested in reviewing textbook proposal for publication. Please contact your local McGraw-Hill office or email to asiapub@mcgraw-hill.com

Visit McGraw-Hill Education (Asia) Website: www.mheducation.asia
Continuing in the spirit of its successful previous editions, the ninth edition of Beer, Johnston, Mazurek, and Cornwell's Vector Mechanics for Engineers provides conceptually accurate and thorough coverage together with a significant refreshment of the exercise sets and online delivery of homework problems to your students. Nearly forty percent of the problems in the text are changed from the previous edition.

The Beer/Johnston textbooks introduced significant pedagogical innovations into engineering mechanics teaching. The consistent, accurate problem-solving methodology gives your students the best opportunity to learn statics and dynamics. At the same time, the careful presentation of content, unmatched levels of accuracy, and attention to detail have made these texts the standard for excellence.

NEW TO THIS EDITION
- Thoroughly Refreshed Problem Set in the Ninth Edition. 40% of the problems are updated from the previous edition.
- Online Homework specific to the text is provided. Many problems are algorithmically-generated giving the instructor a wide array of problems for assignment to students.

CONTENTS
11 Kinematics of Particles
12 Kinetics of Particles: Newton's Second Law
13 Kinetics of Particles: Energy and Momentum Methods
14 Systems of Particles
15 Kinematics of Rigid Bodies
16 Plane Motion of Rigid Bodies: Energy and Momentum Methods
18 Kinetics of Rigid Bodies in Three Dimensions
19 Mechanical Vibrations
Appendix A Some Useful Definitions and Properties of Vector Algebra
Appendix B Moments of Inertia of Masses
Appendix C Fundamentals of Engineering Examination

2010 (February 2009) / Hardcover / 1376 pages
ISBN: 9780077275556
www.mhhe.com/beerjohnston

Continuing in the spirit of its successful previous editions, the ninth edition of Beer, Johnston, Mazurek, and Cornwell's Vector Mechanics for Engineers provides conceptually accurate and thorough coverage together with a significant refreshment of the exercise sets and online delivery of homework problems to your students. Nearly forty percent of the problems in the text are changed from the previous edition. The Beer/Johnston textbooks introduced significant pedagogical innovations into engineering mechanics teaching. The consistent, accurate problem-solving methodology gives your students the best opportunity to learn statics and dynamics. At the same time, the careful presentation of content, unmatched levels of accuracy, and attention to detail have made these texts the standard for excellence.

NEW TO THIS EDITION
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- Online Homework specific to the text is provided. Many problems are algorithmically-generated giving the instructor a wide array of problems for assignment to students.

CONTENTS
1 Introduction
2 Statics of Particles
3 Rigid Bodies: Equivalent Systems of Forces
4 Equilibrium of Rigid Bodies
5 Distributed Forces: Centroids and Centers of Gravity
6 Analysis of Structures
7 Forces in Beams and Cables
8 Friction
9 Distributed Forces: Moments of Inertia
10 Method of Virtual Work
11 Kinematics of Particles
12 Kinetics of Particles: Newton’s Second Law
13 Kinetics of Particles: Energy and Momentum Methods
14 Systems of Particles
15 Kinematics of Rigid Bodies
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17 Plane Motion of Rigid Bodies: Energy and Momentum Methods
18 Kinetics of Rigid Bodies in Three Dimensions
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CIVIL ENGINEERING

ENGINEERING MECHANICS: STATICS AND DYNAMICS
by Nelson A. formerly with Dept of Mechanical Engineering, Aurora Engineering College, Andhra Pradesh

2009 (June 2009) / 860 pages
ISBN: 9780070146143

 Меant for the first year students of all engineering disciplines, this book on Engineering Mechanics covers statics and dynamics using the vector approach. It covers 100% syllabi of all major universities. In-depth explanations, varied solved examples with 3-dimensional diagrams make this a complete offering on the subject.

FEATURES
✓ In SI Units
✓ Follows the Vector Approach
✓ Excellent span of coverage: 100% syllabi coverage.
✓ Excellent depth of coverage: Detailed explanations supported with apt diagrammatic representations in a very organized manner render good understanding of the subject.
✓ Diagrams: Illustrious 3D diagrams help in clear understanding of the topics

Pedagogy :
✓ Solved Examples: 450
✓ Practice problems : 560
✓ Objective type Questions: 140

A total of 1150 problems present in the book

CONTENTS
1. Introduction
2. Vector Algebra
3. System of Forces and Resultant-I (Concurrent Forces)
4. System of Forces and Resultant-II (Non-concurrent Forces)
5. Equilibrium of System of Forces
6. Friction
7. Application of Friction
8. Centre Gravity and Centroid
9. Moment of Inertia
10. Mass Moment of Inertia
11. Virtual Work
12. Kinematics of Particles (Rectilinear Motion)
13. Kinematics of Particles (Curvilinear Motion)
14. Kinetics of Particles
15. Work and Energy
16. Impulse and Momentum
17. Kinematics of Rigid Bodies
18. Kinetics of Rigid Bodies
19. Vibrations

Fluid Mechanics (Introduction)

FLUID MECHANICS
Seventh Edition
Frank M. White, University Of Rhode Island-Kingston

2011 (February 2010) / Hardcover / 896 pages
ISBN: 9780073529349

The seventh edition of White's Fluid Mechanics offers students a clear and comprehensive presentation of the material that demonstrates the progression from physical concepts to engineering applications and helps students quickly see the practical importance of fluid mechanics fundamentals. The wide variety of topics gives instructors many options for their course and is a useful resource to students long after graduation.

The book’s unique problem-solving approach is presented at the start of the book and carefully integrated in all examples. Students can progress from general ones to those involving design, multiple steps and computer usage.
NEW TO THIS EDITION

- Bernoulli presentation was revised and moved to partner with linear momentum.
- New material on microflow concepts have been added.
- Over 200 new problems have been added throughout the text.
- Stimulating new contemporary examples, such as a flying car, kite-driven ships, a vehicle driven by a wind turbine, the Trans-Alaska Pipeline, and Rocket Man's wings.
- Each group of problem assignments has a subheading explaining the topic.

CONTENTS

Chapter 1: Introduction
Chapter 2: Pressure Distribution in a Fluid
Chapter 3: Integral Relations for a Control Volume
Chapter 4: Differential Relations for Fluid Flow
Chapter 5: Dimensional Analysis and Similarity
Chapter 6: Viscous Flow in Ducts
Chapter 7: Flow Past Immersed Bodies
Chapter 8: Potential Flow and Computational Fluid Dynamics
Chapter 9: Compressible Flow
Chapter 10: Open-Channel Flow
Chapter 11: Turbomachinery

FLUID MECHANICS: Fundamentals & Applications Second Edition
by Yunus A. Cengel, University Of Nevada-Reno, and John M. Cimbala, Pennsylvania State University-University Park

2010 (January 2009) / Hardcover / 992 pages
ISBN: 97800772926462 (with Student Resources DVD)
http://www.mhhe.com/cengel

Fluid Mechanics: Fundamentals and Applications, communicates directly with tomorrow's engineers in a simple yet precise manner. The text covers the basic principles and equations of fluid mechanics in the context of numerous and diverse real-world engineering examples. The text helps students develop an intuitive understanding of fluid mechanics by emphasizing the physics, using figures, numerous photographs and visual aids to reinforce the physics.

NEW TO THIS EDITION

- 20% New homework problems.

FEATURES

- Four-Pronged Visual Approach: A four-pronged visual approach is incorporated into this fluids text and package. 1. There is an abundance of figures and diagrams incorporated in the text. 2. There is an abundance of photos, including images from Van Dyke's Album of fluid motion. 3. Fluid concept videos created by Gary Settles of Pennsylvania State University. 4. Numerous CFD animations for key fluid concepts.
- Intuitive Explanations used throughout, featuring everyday phenomena to show basic principles behind fluid mechanics.
- EES Problems included throughout the book, and marked with an EES icon; these are problems that are appropriate for computer solution, and set up to solved with the software package. The Student Resources CD ROM will carry scripted EES problem code and the "run-time" version of EES that readers can use to solve the problems, though it will not save or print. Full EES engine will be available to adopters to download; it will be renewed once a year (summer) with a new password.
- Design-Oriented Problems—each chapter problem set will include several problems that are open-ended, and require students to think beyond just getting a simple, numerical answer to the problem.
- Applied Problems will show fluid mechanics use in a number of disciplines, including ME, Civil, Environmental, Biomedical and Aerospace Engineering.
- FE Exam Questions will be included in the problem sets, and identified.
- Choice of SI alone or SI/English units. In recognition of the fact that English units are still widely used in some industries, both SI and English units are used in this text, with an emphasis on SI. Problems, tables, and charts in English units are designated by "E" after the number for easy recognition, and they can be ignored easily by SI users.

CONTENTS

1 Introduction and Basic Concepts
2 Properties of Fluids
3 Pressure and Fluid Statics
4 Fluid Kinematics
5 Bernoulli and Energy Equations
6 Momentum and Analysis of Flow Systems
7 Dimensional Analysis and Flow Systems
8 Flow in Pipes
9 Differential Analysis of Fluid Flow
10 Approximations of the Navier-Stokes Equation
11 Flow Over Bodies: Drag and Lift
12 Compressible Flow
13 Open-Channel Flow
14 Turbomachinery
15 Computational Fluid Dynamics (CFD)
Appendices
1 Property Tables and Charts (SI Units)
2 Property Tables and Charts (English Units)
3 Introduction to EES
The best-selling Fundamentals of Thermal-Fluid Sciences is designed for the non-mechanical engineering student who needs exposure to key concepts in the thermal sciences in order to pass the Fundamentals of Engineering (FE) Exam. This lavishly illustrated text provides a highly intuitive and practical understanding of the material by emphasizing the physics and the underlying physical phenomena involved. Using a reader-friendly approach and a conversational writing style, the book is self-instructive and entertains while it teaches. It shows that highly technical matter can be communicated effectively using simple yet precise language. The text is made up of Thermodynamics, Heat Transfer and Fluids. The laws that govern these three subjects are all the same. Like all the other Cengel texts, it uses a similar pedagogical approach, by using familiar everyday examples.

CONTENTS
1 Introduction and Overview
PART I - Thermodynamics
2 Basic Concepts of Thermodynamics
3 Properties of Pure Substances
4 Energy Transfer by Heat, Work, and Mass
5 The First Law of Thermodynamics
6 The Second Law of Thermodynamics
7 Entropy
8 Power and Refrigeration Cycles
PART II - Fluid Mechanics
9 Gas Mixtures and Psychrometrics
10 Properties of Fluids
11 Fluid Statics
12 Momentum Analysis of Flow Structures
13 Bernoulli and Energy Equations
14 Flow in Pipes
15 Flow Over Bodies: Drag and Lift
Part III - Heat Transfer
16 Mechanisms of Heat Transfer
17 Steady Heat Conduction
18 Transient Heat Conduction
19 Forced Convection
20 Natural Convection
21 Fundamentals of Thermal Radiation
22 Radiation Heat Transfer
23 Heat Exchanges
PART IV - Appendices
Appendix 1: Property Tables and Charts (SI Units)
Appendix 2: Property Tables and Charts (English Units)
Appendix 3: Introduction to EES
Mastery of any branch of mechanics can be augmented through experience solving problems. The hundreds of solved problems in this book illuminate all of the basics. This edition features chapters on fluid static sand the flow of compressible fluids. Free-body analysis, vector diagrams, the principles of work and energy and of impulse-momentum, and Newton's laws of motion are utilized throughout the book.

CONTENTS
1 Properties of Fluids
2 Fluid Statics
3 Hydrostatic Force on Surfaces
4 Buoyancy and Rotation
5 Translation and Rotation of Liquid Masses
6 Dimensional Analysis and Hydraulics Similitude
7 Fundamentals of Fluid Flow
8 Flow in Closed Conduits
9 Complex Pipeline Systems
10 Flow in Open Channels
11 Flow of Compressible Fluids
12 Measurement of Flow of Fluids
13 Forces Developed by Moving Fluids
14 Fluid Machinery
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NEW

Strength Of Materials/
Mechanics Of Materials

STATICS AND MECHANICS
OF MATERIALS
By Ferdinand P Beer (deceased), E Russell
Johnston & John T DeWolf of University of Con-
necticut and David Mazurek, US Coast Guard
Academy

2011 (January 2010) / Hardcover / 800 pages
ISBN: 9780073380155
www.mhhe.com/beerjohnston

The approach of the Beer and Johnston texts has been utilized by hundreds of thousands of students over decades of engineering edu-
cation. The Statics and Mechanics of Materials text uses this proven methodology in a new book aimed at programs that teach these two subjects together or as a two-semester sequence.

Maintaining the proven methodology and pedagogy of their other textbooks, Beer and Johnston’s Statics and Mechanics of Materials combines the theory and application behind these two subjects into one cohesive text. A wealth of problems, Beer and Johnston’s hallmark Sample Problems, and valuable Review and Summary sections at the end of each chapter highlight the key pedagogy of the text.

FEATURES
• Review and Summary Sections at the end of each chapter provide students with a valuable study tool. Reviewers found these chapter reviews to be one of the strongest features of the text and the best available in the market.
• A careful, step-by-step presentation is followed in each lesson of each chapter; every chapter is organized as follows: a chapter introduction with a chapter outline previewing what will be covered in each lesson. After each lesson there are 1-4 Sample Problems (set up to serve as a model for student solutions) followed by the lesson’s problem set. At the end of each chapter students find a Review and Summary section with notes for review and examples and cross references to key sections. The chapter concludes with a Review Problem section that ties together several concepts from that chapter.

CONTENTS
Chapter 1: Introduction
Chapter 2: Statics of Particles
Chapter 3: Rigid Bodies: Equivalent Systems of Forces
Chapter 4: Equilibrium of Rigid Bodies
Chapter 5: Distributed Forces: Centroids and Centers of Gravity
Chapter 6: Analysis of Structures
Chapter 7: Distributed Forces: Moments of Inertia
Chapter 8: Concepts of Stress
Chapter 9: Stress and Strain: Axial Loading
Chapter 10: Torsion
Chapter 11: Pure Bending
Chapter 12: Analysis and Design of Beams for Bending
Chapter 13: Shearing Stresses in Beams and Thin-Walled Members
Chapter 14: Transformations of Stress
CIVIL ENGINEERING

Chapter 15: Deflection of Beams
Chapter 16: Columns
Appendices
A: Typical Properties of Selected Materials Used in Engineering
B: Properties of Rolled-Steel Shapes
C: Beam Deflections and Slopes
Photo Credits
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Answers to Problems

International Edition

MECHANICS OF MATERIALS
Fifth Edition
By Ferdinand P Beer (deceased), E Russell Johnston & John T DeWolf of University of Connecticut and David Mazurek, US Coast Guard Academy
2009 (June 2008) / Hardcover / 816 pages
ISBN: 9780077221409
http://www.mhhe.com/beerjohnston

At McGraw-Hill, we believe Beer and Johnston’s Mechanics of Materials is the uncontested leader for the teaching of solid mechanics. Used by thousands of students around the globe since it’s publication in 1981, Mechanics of Materials, provides a precise presentation of the subject illustrated with numerous engineering examples that students both understand and relate to theory and application.

The tried and true methodology for presenting material gives your student the best opportunity to succeed in this course. From the detailed examples, to the homework problems, to the carefully developed solutions manual, you and your students can be confident the material is clearly explained and accurately represented.

If you want the best book for your students, we feel Beer, Johnston’s Mechanics of Materials, 5th edition is your only choice.

CONTENTS
1 Introduction—concept Of Stress
2 Stress And Strain—axial Loading
3 Torsion
4 Pure Bending
5 Analysis And Design Of Beams For Bending
6 Shearing Stresses In Beams And Thin-walled Members
7 Transformation Of Stress And Strain
8 Principal Stresses Under Given Loading Conditions
9 Deflection Of Beams
10 Columns
11 Energy Methods

ADVANCED MECHANICS OF SOLIDS
Third Edition
by L. S. Srinath, Indian Institute of Technology, Madras
2008 / Softcover / 524 pages
ISBN: 9780070139886
(McGraw-Hill India Title)
http://www.mhhe.com/srinath/ams3e

The comprehensive text on “Mechanics of Solids” Provides a firm understanding of the subject as the next step after an introductory course on Strength of Materials. In-depth treatment of stress and strain analysis, applications of various strain energy theorems, thermal stresses, composites, and stress concentration make this book unique.

CONTENTS
1. Analysis of Stress
2. Analysis of Strain
3. Stress-Strain Relations for Linearly Elastic Solids
4. Theories of Failure or Yield Criteria and Introduction to Ideally Plastic Solid
5. Energy Methods
6. Bending of Beams
7. Torsion
8. Axisymmetric Problems
9. Thermal Stresses
10. Elastic Stability
11. Introduction to Composite Materials

STRENGTH OF MATERIALS (SIGMA SERIES)
by L. S. Negi, Guru Nanak Dev Polytechnic, Rohini, Delhi
2007 / Softcover / 336 pages
ISBN: 9780070634596 [SI Units]
(McGraw-Hill India Title)
www.mhhe.com/negi/som

Based on the problems and solutions approach, this book on strength of Materials presents the fundamentals and concepts in a simple manner with step-by-step solution of varied examples. The large number of practice problems will facilitate honing of the problem solving skills.

CONTENTS
1. Stress and Strain
2. Analysis of Stresses
3. Analysis of Strains
4. Torsion
5. Shearing Force and Bending Moment
6. Centroid. Second Moment of Area and Product Moment of Area
7. Stresses in Beams
8. Trusses
9. Compression Members
10. Combined Direct and Bending Stress
11. Theories of Failure
12. Deflection – Geometrical Methods
13. Thin Shell
14. Thick Walled Cylinder
15. Plastic Theory of Structures
SCHAUM'S OUTLINE OF STRENGTH OF MATERIALS
Fourth Edition
by William Nash, University of Massachusetts
1998 / 432 pages
ISBN: 9780070466173
(A Schaum's Publication)

CONTENTS
Chapter 1: Tension and Compression
Chapter 2: Statically Indeterminate Force Systems Tension and Compression
Chapter 3: Thin-Walled Pressure Vessels
Chapter 4: Direct Shear Stresses
Chapter 5: Torsion
Chapter 6: Shearing Force and Bending Moment
Chapter 7: Centers of Gravity and Moments of Inertia
Chapter 8: Stresses in Beams
Chapter 9: Elastic Deflection of Beams: Double-Integration Method
Chapter 10: Elastic Deflection of Beams: Method of Singularity Functions
Chapter 11: Statically Indeterminate Beams
Chapter 12: Special Topics in Elastic Beam Theory
Chapter 13: Plastic Deformations of Beams
Chapter 14: Columns. Strain Energy Methods
Chapter 15: Combined Stresses
Chapter 16: Members Subject to Combined Loadings: Theories of Failure

Statistics for Engineers and Scientists stands out for its crystal clear presentation of applied statistics. Suitable for a one or two semester course, the book takes a practical approach to methods of statistical modeling and data analysis that are most often used in scientific work.

Statistics for Engineers and Scientists features a unique approach highlighted by an engaging writing style that explains difficult concepts clearly, along with the use of contemporary real world data sets to help motivate students and show direct connections to industry and research. While focusing on practical applications of statistics, the text makes extensive use of examples to motivate fundamental concepts and to develop intuition.
NEW TO THIS EDITION
- Over 250 new problems have been added
- A new section was added on Tolerance and Prediction Intervals in Chapter 5; the discussion of controlled experiments and observational studies was added to Chapter 1; and confounding in controlled experiments was added in Chapter 7.
- A CONNECT site features power points, Datasets, image library, solutions, and algorithmic problems.

CONTENTS
Chapter 1: Sampling and Descriptive Statistics
Chapter 2: Probability
Chapter 3: Propagation of Error
Chapter 4: Commonly Used Distributions
Chapter 5: Confidence Intervals
Chapter 6: Hypothesis Testing
Chapter 7: Correlation and Simple Linear Regression
Chapter 8: Multiple Regression
Chapter 9: Factorial Experiments
Chapter 10: Statistical Quality Control
A Tables
B Partial Derivatives
C Suggestions for Further Reading
Answers to Selected Exercises

International Edition

FUNDAMENTALS OF FINITE ELEMENT ANALYSIS
by David Hutton, Washington State University, Pullman
2004 / 512 pages / Hardcover
ISBN: 9780072922363 (with Bind-In SubCard) - (Out-of-Print)
ISBN: 9780071241601 [IE]
www.mhhe.com/hutton

CONTENTS
1 Basic Concepts of the Finite Element Method
2 Stiffness Matrices, Spring and Bar Elements
3 Truss Structures: The Direct Stiffness Method
4 Flexure Elements
5 Method of Weighted Residuals
6 Interpolation Functions for General Element Formulation
7 Applications in Heat Transfer
8 Applications in Fluid Mechanics
9 Applications in Solid Mechanics
10 Structural Dynamics
Appendix A: Matrix Mathematics
Appendix B: Equations of Elasticity
Appendix C: Solution Techniques for Linear Algebraic Equations
Appendix D: The Finite Element Personal Computer Program
Appendix E: Problems for Computer Solution

International Edition

INTRODUCTION TO PROBABILITY AND STATISTICS:
Principles and Applications for Engineering and the Computing Sciences
Fourth Edition
by J. Susan Milton, Radford University, and Jesse C. Arnold, Virginia Polytechnic Institute
2003 / Hardcover / 816 pages
ISBN: 9780072468366
ISBN: 9780071242486 [IE]
www.mhhe.com/miltonarnold

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1 Introduction to Probability and Counting
1.1 Interpreting Probabilities
1.2 Sample Spaces and Events
1.3 Permutations and Combinations
1.4 Some Probability Laws
1.5 Axioms of Probability
1.6 Conditional Probability
1.7 Independence and the Multiplication Rule
1.8 Bayes' Theorem
2 Discrete Distributions
2.1 Random Variables
2.2 Discrete Probability Densities
2.3 Expectation and Distribution Parameters
2.4 Geometric Distribution and the Moment Generating Function
2.5 Binomial Distribution
2.6 Negative Binomial Distribution
2.7 Hypergeometric Distribution
2.8 Poisson Distribution
3 Continuous Distributions
3.1 Continuous Densities
3.2 Expectation and Distribution Parameters
3.3 Gamma Distribution
3.4 Normal Distribution
3.5 Normal Probability Rule and Chebyshev's Inequality
3.6 Normal Approximation to the Binomial Distribution
3.7 Weibull Distribution and Reliability
3.8 Transformation of Variables
3.9 Simulating a Continuous Distribution
4 Joint Distributions
4.1 Joint Densities and Independence
4.2 Expectation and Covariance
4.3 Correlation
4.4 Conditional Densities and Regression
5.5 Transformation of Variables
6 Descriptive Statistics
6.1 Random Sampling
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Instructors love Numerical Methods for Engineers because it makes teaching easy! Students love it because it is written for them—with clear explanations and examples throughout. The text features a broad array of applications that span all engineering disciplines. The sixth edition retains the successful instructional techniques of earlier editions. Chapra and Canale’s unique approach opens each part of the text with sections called Motivation, Mathematical Background, and Orientation. This prepares the student for upcoming problems in a motivating and engaging manner. Each part closes with an Epilogue containing Trade-Offs, Important Relationships and Formulas, and Advanced Methods and Additional References. Much more than a summary, the Epilogue deepens understanding of what has been learned and provides a peek into more advanced methods.

Approximately 20% of the problems are new or revised in this edition. The expanded breadth of engineering disciplines covered is especially evident in the problems, which now cover such areas as biotechnology and biomedical engineering.

Users will find use of software packages, specifically MATLAB®, Excel® with VBA and Mathcad®,. This includes material on developing MATLAB® m-files and VBA macros.

NEW TO THIS EDITION

- Approximately 20% of the problems are new or revised for this edition.

FEATURES

- Challenging problems drawn from all engineering disciplines are included in the text.
- Chapra is known for his clear explanations and elegantly rendered examples.
- Users will have access to a book specific website which will house Instructor’s Solutions Manual, PowerPoint slides of all text figures, M-Files, general textbook information and more!

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5 Bracketing Methods
6 Open Methods
7 Roots of Polynomials
8 Case Studies: Roots of Equations
Part 3 Linear Algebraic Equations
9 Gauss Elimination
10 LU Decomposition and Matrix Inversion
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12 Case Studies: Linear Algebraic Equations
Part 4 Optimization
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Applied Numerical Methods with MATLAB for Engineers and Scientists
Second Edition
by Steven C. Chapra, Tufts University
2006 (November 2006) / Hardcover / 608 pages
ISBN: 9780073132907
ISBN: 9780071259217 [IE]

Steven Chapra’s second edition, Applied Numerical Methods with MATLAB for Engineers and Scientists, is written for engineers and scientists who want to learn numerical problem solving. This text focuses on problem-solving (applications) rather than theory, using MATLAB, and is intended for Numerical Methods users; hence theory is included only to inform key concepts. The second edition feature new material such as Numerical Differentiation and ODE’s: Boundary-Value Problems.

For those who require a more theoretical approach, see Chapra’s best-selling Numerical Methods for Engineers, 5/e (2006), also by McGraw-Hill.

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Part One Modeling, Computers, and Error Analysis.
2. MATLAB Fundamentals.
3. Programming with MATLAB.
4. Roundoff and Truncation Errors.
Part Two Roots and Optimization
5. Roots: Bracketing Methods.
7. Optimization.
Part Three Linear Systems
8. Linear Algebraic Equations and Matrices.
10. LU Factorization.
11. Matrix Inverse and Condition.
12. Iterative Methods.
Part Four Curve Fitting
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Finite Element Methods
An Introduction to the Finite Element Method is organized and written in such a way that students should not find it difficult to understand the concepts and applications discussed in the book. Rigorous mathematical treatments and derivations are kept to a minimum. A consistent approach of finite element formulation and solution is used for every domain analysis described in the book. Plenty of simple examples are given to show students how to solve related problems. The exercises at the end of some chapters are within students’ capability and can be done without using a computer. Although this book is intended primarily for undergraduate students, it is also suitable for the early part of finite element courses in postgraduate programme. The basic and conceptual approaches which are used also make this book appropriate for practising engineers who want to know and learn the finite element method.

Contents
Preface
1– Introduction
2–Linear Spring Elements and the Direct Equilibrium Method
3–Bar Element
4–Truss Elements
5–Beam and Frame Elements
6–The Minimum Potential Energy Method
7–Constant Strain Triangular Elements
8–Higher-Order Elements and Isoparametric Formulation
9– Solid Elements - Tetrahedral
10–Analysis of Structural Dynamics
11–Analysis of Heat Transfer
12–Finite Element Applications and Computer Programming
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AN INTRODUCTION TO THE FINITE ELEMENT METHOD
Third Edition
by J N Reddy, Texas A&M University
2006 / Hardcover / 912 pages
ISBN: 9780072466850
www.mcgraw-hill.com/reddy3e

CONTENTS
1 Introduction
2 Mathematical Preliminaries, Integral Formulations, and Variational Methods
3 Second-order Differential Equations in One Dimension: Finite Element Models
4 Second-order Differential Equations in One Dimension: Applications
5 Beams and Frames
6 Eigenvalue and Time-Dependent Problems
7 Computer Implementation
8 Single-Variable Problems in Two Dimensions
9 Interpolation Functions, Numerical Integration, and Modeling Considerations
10 Flows of Viscous Incompressible Fluids
11 Plane Elasticity
12 Bending of Elastic Plates
13 Computer Implementation of Two-Dimensional Problems
14 Prelude to Advanced Topics

FUNDAMENTALS OF FINITE ELEMENT ANALYSIS
by David Hutton, Washington State University, Pullman
2004 / 512 pages / Hardcover
ISBN: 9780072922363 (with Bind-In SubCard) - (Out-of-Print)
ISBN: 9780071241601 [IE]
www.mcgraw-hill.com/hutton

CONTENTS
1 Basic Concepts of the Finite Element Method
2 Stiffness Matrices, Spring and Bar Elements
3 Truss Structures: The Direct Stiffness Method
4 Flexure Elements
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6 Interpolation Functions for General Element Formulation
7 Applications in Heat Transfer
8 Applications in Fluid Mechanics
9 Applications in Solid Mechanics
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Appendix B: Equations of Elasticity
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Appendix D: The Finite Element Personal Computer Program
Appendix E: Problems for Computer Solution

SCHAUM'S OUTLINE OF FINITE ELEMENT ANALYSIS
by George R. Buchanan, Ph.D., Tennessee Technological University
1995 / Softcover / 264 pages
ISBN: 9780070087149
(A Schaum's Publication)

CONTENTS
Mathematical Background
One-Dimensional Finite Elements
Two-Dimensional Finite Elements
Variational Principles, Galerkin Approximation, and Partial Differential Equations
Isoparametric Finite Elements
Selected Topics in Finite Element Analysis
References
Appendix: Computer Code for Coupled Steady-State Thermoelasticity

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Website: www.mheducation.asia
The book covers all the essentials of practical surveying in a sequential and lucid manner. It covers the first course on the subject for Civil Engineering fully. It specially keeps the needs of the self-studying students by means of explanatory notes inserted particularly with reference to the more common surveying options. The usual exhaustive theory on the subject has been condensed into systematic, point wise pattern.

Chapters and content has been re-organized, rewritten and elaborated wherever necessary. Solved examples and exercises have been added to support the text in relevant places. In all it is the most updated book on the subject.

NEW TO THIS EDITION
- Addition of the following topics:
- Recent developments in classification of survey due to rapid changes in instrumentation like GIS, GPS, Remote Sensing (Chap 1)
- Determination of Data from Contour Maps (Chap 9)
- Topo-sheets and sheet numbering system (Appendix)
- Projection systems (Appendix)
- Expanded coverage on the following:
  - Measurement of Distances with Tape (Chap 2)
  - Contouring (Chap 9)
  - Total Station Survey – details and its uses (Chap 10)
- Pedagogy:
  - Increase of pedagogy (Examples, MCQ’s, Questions) by 53

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1. Fundamental Concepts
2. Horizontal Measurements
3. Compass Surveying
4. Theodolite
5. Traversing
6. Measurement of Vertical Distances
7. Tacheometry
8. Plane Table Surveying
9. Contouring
10. Total-station Survey
11. Curves
12. Measurement of Area
13. Measurement of Volumes
14. Setting Out Works

NEW TO THIS EDITION
- Includes all recent developments in the field of Surveying
- Coverage on recent developments in the field like: Classification of Sensors; Satellite Remote Sensing Program
- Addition of new topics: Photogrammetric Products; Applications of Raster Data Structure; Applications of Vector Data Structure
- Expanded coverage on various topics like: Triangulation; Electromagnetic Distance; Measurement; Stereo photography; Parallax; Logical sequencing of chapters

CONTENTS
1. Trigonometric Levelling
2. Triangulation
3. Theory of Errors and Triangulation Adjustment
4. Hydrography
5. Aerial Survey
6. Remote Sensing
7. Geographic Information System (GIS)
8. Global Positioning System
9. Field Astronomy
**International Edition**

**ELEMENTS OF PHOTOGRAMMETRY WITH APPLICATIONS IN GIS**
*Third Edition*
*by Paul K. Wolf, University of Wisconsin, Madison and Ron A. DeWitt, University of Florida, Gainesville*

2000 / 648 pages  
ISBN: 9780072924541 (Out of Print)  
ISBN: 9780071236898 [IE]

**CONTENTS**
- Chapter 1: Introduction
- Chapter 2: Principles of Photography and Imaging
- Chapter 3: Cameras and Other Imaging Devices
- Chapter 4: Image Measurements and Refinements
- Chapter 5: Object Space Coordinate Systems
- Chapter 6: Vertical Photographs
- Chapter 7: Stereoscopic Viewing
- Chapter 8: Stereoscopic Parallax
- Chapter 9: Elementary Methods of Planimetric Mapping for GIS with Aerial and Satellite Imagery
- Chapter 10: Tilted Photographs
- Chapter 11: Introduction to Analytical Photogrammetry
- Chapter 12: Stereoscopic Plotting Instruments
- Chapter 13: Mapping and Data Collection for GIS. Using Stereoscopic Plotting Instruments
- Chapter 14: Principles of Digital Image Processing
- Chapter 15: Principles of Softcopy Photogrammetry
- Chapter 16: Ground Control for Photogrammetry
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- Chapter 19: Terrestrial and Close-Range Photogrammetry
- Chapter 20: Introduction to GIS
- Appendix A: Units, Errors, Significant Figures and Error Propagation
- Appendix B: Introduction to Least Square Adjustment
- Appendix C: Coordinate Transformations
- Appendix D: Development of Collinearity Condition Equations
- Appendix E: Digital Resampling
- Appendix F: Conversions Between Coordinate Systems

**CONSTRUCTION PLANNING, EQUIPMENT, AND METHODS**
*Eighth Edition*
*by Robert L. Peurifoy (deceased), Clifford J. Schexnayder, Arizona State University-Tempe, Aviad Shapira, Technion Israel Institute of Technology, and Robert Schmitt, University Of Wisconsin Platteville*

2011 (February 2010) / Hardcover / 784 pages  
ISBN: 9780073401126  
ISBN: 9780071289511 [IE]

**http://www.mhhe.com/pearlfoye**

The Eighth Edition of Construction Planning, Equipment and Methods follows in the footsteps of the previous editions by providing the reader with the fundamentals of machine utilization and production estimating in a logical, simple and concise format.

This text is aimed at supporting a basic undergraduate construction equipment course that is part of an engineering curriculum. It is also applicable to graduate equipment courses. In addition, since technology is constantly evolving, this text provides an understanding of machine capabilities and how to properly apply those capabilities to construction challenges.

**NEW TO THIS EDITION**
- Revised content on balance-curve sketches on loader/truck and paver/tractor operations and real-time production analysis.
- Information on GPS has been added.
- New photos and illustrations have been added.
- A text website will feature instructor’s solutions manual and lecture power point slides.

**CONTENTS**
- Chapter 1: Machines Make it Possible
- Chapter 2: Equipment Economics
- Chapter 3: Planning for Earthwork Construction
- Chapter 4: Soil and Rock
- Chapter 5: Compaction and Stabilization Equipment
- Chapter 6: Mobile Equipment Power Requirements
- Chapter 7: Dozers
- Chapter 8: Scrapers
- Chapter 9: Excavators
- Chapter 10: Trucks and Hauling Equipment
- Chapter 11: Finishing Equipment
- Chapter 12: Drilling Rock and Earth
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- Chapter 15: Asphalt Mix Production and Placement
- Chapter 16: Concrete and Concrete Equipment
- Chapter 17: Cranes
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- Chapter 19: Air Compressors and Pumps
- Chapter 20: Forming Systems
- Appendix A: Planning for Building Construction
- Appendix B: Alphabetic List of Units with Their SI Names and Conversion Factors
- Appendix C: Selected English-to-SI Conversion Factors
- Appendix D: Conversions Between Coordinate Systems

**SCHAUM'S OUTLINE OF INTRODUCTORY SURVEYING**

1985 / 368 pages  
ISBN: 9780070711242  
*(A Schaum’s Publication)*

**CONTENTS**
- Trigonometry for Surveyors
- Field Notes
- Horizontal Distances
- Transits
- Leveling
- Angle Measurements
- Traverse Surveys
- Topographic Surveys
- Construction Surveys
- Slope Staking
- Earthwork
- Horizontal Curves
- Vertical Curves
- Drawing Maps
CONSTRUCTION ELECTRONIC MEASUREMENT STANDARDS (CEMS): PART 1 REVIEWED

Revised Edition

by Ai-Lin Teo, Davis Langdon and Seah Singapore Pte Ltd, KPK Quantity Surveyors

2008 (January 2008) / Softcover / 370 pages
ISBN: 9780071274814


The book presents a comprehensive overview of measurement techniques. There is a section on the differences between the old standard method of measurement (SMM2) and the CEMS Part 1. The easy-to-follow guide to develop standard descriptions for electronic measurement is presented for all the 18 sections of the CEMS Part 1.

Written in a style that is easy to follow, students, quantity surveyors, architects and engineers will find it a very useful book.

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3 02000000 Demolition and alteration works
4 03000000 Piling and diaphragm walling
5 04000000 Excavation works
6 05000000 Concrete work
7 06000000 Brickwork and blockwork
8 07000000 Stonework
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14 13000000 Metalwork
15 14000000 Wall and ceiling finishes
16 15000000 Floor finishings
17 16000000 Glazing
18 17000000 Painting and decorating
19 18000000 Drainage
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Building Quantities: An Introduction Using Construction Electronic Measurement Standards (Revised Edition) aims to provide students with an understanding of the general principles and steps adopted in the preparation of Bill of Quantities (BQ), and is designed to be used in conjunction with the SS CP 97:2002 Construction Electronic Measurement Standards (CEMS), Part 1: SMM for Building Works.

It presents a comprehensive overview of measurement techniques used in conjunction with the SS CP 97:2002 Construction Electronic Measurement Standards (CEMS), Part 1: SMM for Building Works. It includes the step-by-step guide for generating quantities from Object Oriented CAD building models using CEMS. The easy-to-follow guide to electronic measurement is presented in a CD-ROM. This guide is the result of a collaborative research in generating quicker and more accurate quantities from virtual building models using CEMS.

The contents of the book include:

**PART I: Introduction**
1. Structure of the book
2. Quantifying services

**PART II: Taking-Off: Principles of Measurement**
3. Fundamentals of measurement
4. Centre-line method

**PART II: Taking-Off: Pitched Roof Building with Strip Foundation**
5. Excavation works and concrete work (substructure)
6. Brickwork (superstructure)
7. Finishes (superstructure)
8. Doors and windows (superstructure)

**PART III: Taking-Off: Reinforced Concrete Roof Building with Pad Foundation**
9. Excavation works and concrete work (substructure)
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**Appendix I** Specification notes and drawings for Pitched Roof Building with Strip Foundation
**Appendix II** Specification notes and drawings for Reinforced Concrete Roof Building with Pad Foundation

**Appendix III** CEMS cross referencing to Chapter 6
**Appendix IV** CEMS cross referencing to Chapter 7 to 10
**Appendix V** Generated BQ pages using Cato and CEMS
Project Management Scheduling

International Edition

PROJECT MANAGEMENT FOR ENGINEERING AND CONSTRUCTION
Second Edition
by Garold D. Oberlender, Oklahoma State University
2000 / 384 pages / Hardcover
ISBN: 9780070393608

CONTENTS
Chapter 1: Introduction
Chapter 2: Working with Project Teams
Chapter 3: Project Initiation
Chapter 4: Early Estimates
Chapter 5: Project Budgeting
Chapter 6: Development of Work Plan
Chapter 7: Design Proposals
Chapter 8: Project Scheduling
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Appendix A: Example Project
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Contracts/Legal

NEW

International Edition

CONTRACTS AND THE LEGAL ENVIRONMENT FOR ENGINEERS AND ARCHITECTS
Seventh Edition
by Joseph T. Bockrath, Louisiana State University-Baton Rouge, and Fredric L. Plotnick, Drexel University
2011 (January 2010) / Hardcover / 640 pages
ISBN: 9780073397849
ISBN: 9780071221320 [IE]

www.mhhe.com/bockrath

The seventh edition of Contracts and the Legal Environment for Engineers and Architects has been written for students in the engineering and architecture fields to teach the basic principles of the law and a ready reference for practicing design professionals. This edition has been completely updated in recognition of the dynamic changes in the law in recent years.

The text has been entirely reordered and several new chapters and chapter sections have been added. The material in this seventh edition has been reorganized and expanded into seven parts: Part One: Basic principles of the law and court systems in both the United States and globally. Part Two: Basic principles of contracts. Part Three: Relationships of individuals and society focusing upon such areas as agency, partnerships, corporations, insurance and governmental regulations. Part Four: Basic principles of tort law including concepts of negligence and product liability. Part Five: Basic principles of property ranging from real property to intellectual property. Part Six: Impact to the daily practice of a design professional involved in a construction project. Part Seven: The role of the design professional in litigation.

NEW TO THIS EDITION
✓ Concise Text
✓ Thoroughly updated throughout
✓ Global coverage of the basic principles of the law and court systems.
✓ Up to date with the current law.
✓ Assets on the text website include footnotes as referenced throughout the text; answers to end-of-chapter questions; mapping of seventh edition to sixth edition chapters and sections for faculty course syllabus; Errata.

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Engineering Economy

International Edition

BASICS OF ENGINEERING ECONOMY
by Leland T. Blank, American University of Sharjah, UAE, and Anthony J. Tarquin
2008 (October 2007) / Hardcover / 432 pages
ISBN: 9780073401294
ISBN: 9780071287623 [IE]

www.mhhe.com/blank

This text covers the basic techniques and applications of engineering economy for all disciplines in the engineering profession. The writing style emphasizes brief, crisp coverage of the principle or technique discussed in order to reduce the time taken to present and grasp the essentials. The objective of the text is to explain and demonstrate the principles and techniques of engineering economic analysis as applied in different fields of engineering. This brief text includes coverage of multiple attribute evaluation for instructors who want to include non-economic dimensions in alternative evaluation and the discussion of risk considerations in the appendix, compared to Blanks comprehensive text, where these topics are discussed in two unique chapters.

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Chapter 2: Factors: How Time and Interest Effect Money
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Chapter 4: Present Worth Analysis
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Chapter 7: Benefit/Cost Analysis and Public Sector Projects
Chapter 8: Breakeven, Sensitivity and Payback Analysis
Chapter 9: Replacement and Retention Decisions
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Appendix C Alternative Evaluation that Includes Multiple Attributes and Risk
Appendix D Answers to Problems for Test Review and FE Exam Practice
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Glossary of Terms and Symbols
ENGINEERING ECONOMY
Sixth Edition
by Leland T. Blank, Texas A&M University, and Anthony Tarquin, University of Texas—El Paso
2005 / 741 pages / Hardcover
ISBN: 9780073205342 (with OLC Bind-In Card/Engg Sub Card)
ISBN: 9780071274500 (IE, 2-color text)
www.mhhe.com/blank6

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Environmental Engineering (Intro)

International Edition

PRINCIPLES OF ENVIRONMENTAL ENGINEERING & SCIENCE
Second Edition
by Mackenzie L. Davis, Michigan State University-East Lansing, and
Susan J. Masten, McMaster University
2009 (January 2008) / Hardcover / 736 pages / 398 illus
ISBN: 9780073122359
ISBN: 9780071287807 [IE]

www.mhhe.com/davismusten

Principles of Environmental Engineering is intended for a course in introductory environmental engineering for sophomore- or junior-level students. The emphasis of this text is on engineering principles rather than on engineering design. Students should understand such calculus topics as differentiation, integrations, and differential equations. Principles places more emphasis on scientific principles, ethics, and safety, and focuses less on engineering design. The text exposes students to a broader range of environmental topics through separate chapters on ecosystems, geological and soil resources, and agricultural effects. This new edition includes a new chapter on Biology, updated science and technology discussions to reflect the latest trends and new case studies in each chapter.

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3 Biology
4 Materials and Energy Balances
5 Ecosystems
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8 Sustainable Energy, Mineral and Soil Resources
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12 Air Pollution
13 Solid Waste Management
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16 Ionizing Radiation
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ENVIRONMENTAL STUDIES
Second Edition
by Benny Joseph
2008 / Softcover / 372 pages
(McGraw-Hill India Title)

www.mhhe.com/joseph/es2e

Highlights:

- Comprehensive coverage of Pollution, Components of Environment and Biodiversity (core to the syllabus).
- Important topics like Genetic Engineering in relation to Biodiversity and Catalytic Converters and Electrostatic Precipitators dealt with in detail. (Refer chapter 5 & 6)
- The International Conventions and Protocols for Environmental Protection discussed in detail. (Not a feature in competition)
- Quality Diagrams: Enables clear understanding of the concepts. (For example: Refer diagrams on Sulphur Cycle and Rain Water Harvesting)
- Currentness: Latest statistical data included. (For example: Refer Page Number 158, The Top Ten of Worst Polluted Places—As per 2007 ratings)

Pedagogical Features:

- Review questions - 203
- Objective-type questions- 146
- Cases from the Indian scenario -- will help in the field work and report- 35
- Short Answer Questions. 136
- Glossary of technical terms frequently used in Environmental Science

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4. Ecology
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6. Environmental Pollution
7. Social Issues and the Environment
8. Human Population and the Environment
Stress Analysis

International Edition

ADVANCED STRENGTH AND APPLIED STRESS ANALYSIS
Second Edition
by Richard Budynas, Rochester Institute of Technology
1999 / Hardcover / 720 pages
ISBN: 9780070089853
ISBN: 9780071160995 [IE]

CONTENTS
Chapter 1: Basic Concepts of Force, Stress, Strain, and Displacement
Chapter 2: Stress and Strain. Transformations, Equilibrium, and Compatibility
Chapter 3: Fundamental Formulations of Stress, Strain, and Deflection
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Chapter 5: Topics from Advanced Mechanics of Materials
Chapter 6: Energy Techniques in Stress Analysis
Chapter 7: Strength Theories and Design Methods
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Chapter 9: Introduction to the Finite Element Method
Chapter 10: Finite Element Modeling Techniques
Appendix A: SI and USCU Conversions
Appendix B: Properties of Cross Sections
Appendix C: Beams in Bending
Appendix D: Singularity Functions
Appendix E: Principal Second-area Moments
Appendix F: Stress Concentration Factors
Appendix G: Strain Gage Rosette Equations
Appendix H: Corrections for Transverse Sensitivity of Strain
Appendix I: Matrix Algebra and Cartesian Tensors.

International Edition

INTRODUCTION TO ENVIRONMENTAL ENGINEERING
Fourth Edition
by Mackenzie L. Davis, Michigan State University-East Lansing, and David A. Cornwell, Environmental Engineering & Technology
2008 (October 2006) / Hardcover / 1,024 pages
ISBN: 9780072424119
ISBN: 9780071259224 [IE]
www.mhhe.com/davis

Davis and Cornwell’s Introduction to Environmental Engineering is one of the most comprehensive resources on the multiple aspects of environmental engineering, from solid waste disposal to air and noise pollution. Pedagogically oriented toward engineers, the text places a much-needed emphasis on fundamental concepts, definitions, problem-solving, and design, while providing numerous homework problems and discussion questions in each chapter. The 4th edition features completely up-to-date coverage of environmental laws, regulations, and standards, as well as the addition of a new chapter on materials and energy balances, and end of chapter computer application problems. A discussion on environmental ethics complete with case studies and homework problems presents the legal framework that governs environmental engineering design.
Fundamentals of Structural Analysis fourth edition, introduces engineering and architectural students to the basic techniques for analyzing the most common structural elements, including beams, trusses, frames, cables, and arches. The text covers the classical methods of analysis for determinate and indeterminate structures, and provides an introduction to the matrix formulation on which computer analysis is based.

FEATURES

- Design and layout has been improved to better illustrate example problems.
- The Solutions Manual has been revised and checked for accuracy.
- The text contains a highly detailed, realistic art program with fully drawn, practical illustrations.
- Website will contain solutions manual, image library, computer problem solutions, and RISA software.

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Chapter 17 Matrix Analysis of Trusses by the Direct Stiffness Method
Chapter 18 Matrix Analysis of Beams and Frames by the Direct Stiffness Method

Structural Analysis: A Matrix Approach
Second Edition
by Pandit G S
2008 / Softcover / 620 pages
ISBN: 9780070667358
(McGraw-Hill India Title)

Meant for the undergraduate students of civil engineering, this text on "Structural Analysis" has been updated with units in the SI system. It has been written in a clear lucid style which presents the complex concepts of matrix analysis in an easy-to-understand manner.

CONTENTS

Basic Concepts
Basic Methods of Structural Analysis
Determinants and Matrices
Flexibility and Stiffness Matrices
Continuous Beams
Rigid-Jointed Plane Frames
Pin-Jointed Frames
Rigid-Jointed Space Frames
Pin-Jointed Space Frames
Comparison of Force and Displacement Methods
Transformation Matrices – Element Approach
Special Problems and Techniques
Appendix A: Comprehensive List of Standard Result
Appendix B: Answers to Problems

INVITATION TO PUBLISH

McGraw-Hill is interested in reviewing textbook proposal for publication. Please contact your local McGraw-Hill office or email to asiapub@mcgraw-hill.com

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Website: www.mheducation.asia
Structures: Concrete

2010 (July 2009) / Hardcover / 864 pages
ISBN: 9780073293493
www.mhhe.com/concrete

The 14th edition of the classic text, Design of Concrete Structures, is completely revised using the newly released 2008 ACI (American Concrete Institute) Code. This new edition has the same dual objectives as the previous editions: first to establish a firm understanding of the behavior of structural concrete, then to develop proficiency in the methods used in current design practice.

Design of Concrete Structures covers the behavior and design aspects of concrete and provides updated examples and homework problems. New material on slender columns, seismic design, anchorage using headed deformed bars, and reinforcing slabs for shear using headed studs has been added. The notation has been thoroughly updated to match changes in the ACI Code.

The text also presents the basic mechanics of structural concrete and methods for the design of individual members for bending, shear, torsion, and axial force, and provides detail in the various types of structural systems applications, including an extensive presentation of slabs, footings, foundations, and retaining walls.

NEW TO THIS EDITION
- Updated modified compression theory method of shear design from the AASHTO LRFD Bridge Design Specifications and modified shear friction design procedures the ACI (American Concrete Institute) Code added to Chapter 4.
- Updated homework problems.

CONCRETE TECHNOLOGY

Fourth Edition
by ML Gambhir, Thapar Institute of Engineering & Technology, Patiala
2009 / Softcover / 748 pages
ISBN: 9780070151369

In the last decade or so tremendous infrastructure developments have taken place in the country, thanks to globalization, the practice in the technology of making High Performance Concrete (HPC) is in place. Currently India is the second largest producer of cement in the world, only behind China.

In the last five years number of significant developments have taken place in the field of Cement and Concrete technology. One of the major developments has been the implementation of Euro codes. A common code with a number of innovative provisions has come into force from January 1, 2004 for European Nations.

In view of similarities of Indian codes with British codes, the Euro codes have been introduced in this edition. The major mix design methods used in Indian context are critically reviewed. The discrepancies in the Indian Standard Recommended Guidelines for mix proportioning and its nonconformities with the provisions of IS:456-2000 have been identified and where possible changes have been suggested.

The book has been thoroughly revised, updated and expanded in view of the current scenario. 115 photographs have been added based on reviewer feedback and competition analysis.

In all it is the most updated book on the subject.

FEATURES
- Euro codes introduced, new, updated and expanded information added in Chapter 10 on proportioning of concrete mixes in terms of Euro codes
- Different methods of mix proportioning are compared by means of a mix design problem
- A new section on mix design for pumped concrete included. The mix-design procedures have been illustrated with flow charts to enable readers to evolve their own mix proportion calculators. —Chapter 10
- Greater emphasis is laid on ready mixed and pumped concretes in all aspects. A number of state-of-the-art construction technologies including slip forming have been introduced. —Chapter 11
- High-density and nuclear concretes added -Chapter 14.
- Section on self compacting concrete has been rewritten to include recent developments New section on design and production of ultra lightweight foamed concrete – Chapter 16
15 Photographs added through our the book!

CONTENTS
1. Concrete as Construction Material
2. Concrete Making Materials—I: Cement
3. Concrete Making Materials—I: Aggregate
4. Concrete Making Materials—I: Water
5. Chemical Admixtures and Mineral Additives
6. Properties of Fresh Concrete
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9. Quality Control of Concrete
10. Proportioning of Concrete Mixes
11. Production of Concrete
12. Concrete Under Extreme Environmental Conditions
13. Inspection and Testing
14. Special Concretes and Concreting Techniques
15. Deterioration of Concrete and its Prevention
16. High Performance Concretes
17. Repair Technology for Concrete Structures

REINFORCED CONCRETE DESIGN
Second Revised Edition
by S N Sinha, Indian Institute of Technology, New Delhi
2002 / Softcover / 725 pages
ISBN: 9780071231572 [IE]
(McGraw-Hill India Title)

CONTENTS
1 Reinforced Concrete Materials
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4 Shear, Torsion and Bond
5 Serviceability Requirements
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SCHAUM’S OUTLINE OF REINFORCED CONCRETE DESIGN
Third Edition
by Noel Evard, formerly University of Texas
1993 / 368 pages
ISBN: 9780070197725
(A Schaum’s Publication)

CONTENTS
1 Materials and Components for Reinforced Concrete Construction
2 Gravity Loads Forces, Shear, Moments, and Reactions
3 Lateral Loads Forces, Shear, Moments, and Reactions
4 Alternate Design Method General Requirements and Flexural Computations
5 Strength Design
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NEW

REINFORCED CONCRETE DESIGN
Third Edition
by Pilai S Unnikrishna, and Menon Devdas

2009 (April 2009) / Softcover / 980 pages
ISBN: 9780071014110X
(A McGraw-Hill India Title)

This third edition of Reinforced Concrete Design follows provisions of IS 456: 2000. The latest developments in the field and certain additional topics have been incorporated in this edition of the book, which is being used by students, teachers, and design engineers. The contents of the second edition have been thoroughly reviewed and updated, the examples and answers to problems reworked to incorporate recent developments, and review questions and references expanded and updated.

Apart from the revision of the seventeen chapters of the second edition, several new sections have been added with associated design examples, review questions, problems and references. With updated content this book presents a state-of-the-art coverage of all the topics in reinforced concrete design generally required for a civil engineering degree programme in Indian universities.
The book covers the topics in depth, yet at the same time in a concise and student friendly way. The content has been arranged in a very organized and graded manner—(e.g. Chapter 6 on Tension Members) The flow is very well structured and topics have been broken into subtopics—increasing clarity. New chapters on: Introduction to Limit State Design, Light Gauge Steel Construction and Steel Sacks. Code being followed in the book: IS 800 1984. Detailed coverage of High Strength Friction Grip bolts (Chapter 2). Prologue to the New Code IS: 800 2009 has been given in chapter on Limit State Design (Chapter 18)

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2 Simple Connections—Riveted, Bolted and Pinned Connections
3 Simple Connections—Welded Connections
4 Compression Members
5 Column Bases and Footings
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9 Plate Girder
10 Eccentric Connections
11 Industrial Buildings
12 Water Tanks
13 Steel Stacks
14 Bridges
15 Tubular Structures
16 Light-Gauge Steel Construction
17 Elementary Plastic Analysis and Design
18 Introduction to Limit State Design

International Edition

STEEL STRUCTURES: BEHAVIOR AND LRFD
by Ramalu S Vinnakota, Marquette University
2006 / Hardcover / 928 pages
ISBN: 9780072366143
ISBN: 9780071131070 [IE]
www.mhhe.com/vinnakota

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1 Introduction
2 Steels
3 Structures
4 Design Loads and Design Philosophy
5 Structural Analysis and Required Strengths
6 Connectors
7 Tension Members
8 Axially Loaded Columns
9 Adequately Braced Compact Beams
10 Unbraced Beams
11 Members Under Combined Forces

SCHAUM’S OUTLINE OF STRUCTURAL STEEL DESIGN
by Abraham J. Rokach, University of Illinois
1991 / Softcover / 210 pages
ISBN: 9780070535633
(A Schaum’s Publication)

CONTENTS
Structural Steel
Introduction to LRFD
Tension Members
Column Numbers and Other Compression Members
Compact Beams and Other Flexural Members
Noncompact Beams and Plate Girders
Members in Flexure and Tension
Beam-Columns: Combined Flexure and Compression
Torsion
Composite Members
Connections
Other Design Considerations

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NEW

Structures

INTERNATIONAL EDITION

FUNDAMENTALS OF STRUCTURAL ANALYSIS
Fourth Edition
by Kenneth M. Leet, Northeastern University, Chia-Ming Uang, and Anne Gilbert, Speigel Zamcnik & Shah
2011 (February 2010) / Hardcover / 864 pages
ISBN: 9780073404109
ISBN: 9780071289382 (IE)

www.mhhe.com/leet

Fundamentals of Structural Analysis fourth edition, introduces engineering and architectural students to the basic techniques for analyzing the most common structural elements, including beams, trusses, frames, cables, and arches. The text covers the classical methods of analysis for determinate and indeterminate structures, and provides an introduction to the matrix formulation on which computer analysis is based.

FEATURES
- Design and layout has been improved to better illustrate example problems.
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- The text contains a highly detailed, realistic art program with fully drawn, practical illustrations.
- Website will contain solutions manual, image library, computer problem solutions, and RISA software.

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Plates And Shells

INTERNATIONAL EDITION

THEORY OF PLATES AND SHELLS
Second Edition
by Stephan Timoshenko, deceased; Krieger Woinowsky, Stanford University
1959 / 580 pages
ISBN: 9780070858206 (IE)

CONTENTS
1: Bending of Long Rectangular Plates to a Cylindrical Surface
2: Pure Bending of Plates
3: Symmetrical Bending of Circular Plates
4: Small Deflections of Laterally Loaded Plates
5: Simply Supported Rectangular Plates
6: Rectangular Plates with Various Edge Conditions
7: Continuous Rectangular Plates
8: Plates on Elastic Foundations
9: Plates of Various Shapes
10: Special And Approximate Methods in Theory of Plates
11: Bending of Anisotropic Plates
12: Bending of Plates Under the Combined Action of Lateral Loads and Forces in the Middle Plane of the Plate
13: Large Deflections of Plates
14: Deformation of Shells without Bending
15: General Theory of Cylindrical Shells
16: Shells Having the Form of a Surface of Revolution and Loaded Symmetrically with Respect to their Axis

Water Resources

INTERNATIONAL EDITION

WATER CHEMISTRY
by Mark M Benjamin, University of Washington
2002 / 688 pages / Hardcover
ISBN: 9780072383904 (Out-of-Print)
ISBN: 9780071202398 (IE)

CONTENTS
1: Concepts in Aquatic Chemistry
2: Potentials, Energy, and Forces: Ways to Interpret Changes in Physical/Chemical Systems
3: Acids and Bases, Part 1. Acid/Base Speciation and Exact Solutions to Acid/Base Problems
4: Acids and Bases, Part 2. Approximate Solutions to Acid/Base Problems Using Spreadsheets and Log C-pH Diagrams
5: Titrations and Buffers
6: Software for Solving Chemical Equilibrium Problems
7: Gas/Liquid Equilibrium
8: Chemistry of Metals in Aqueous Systems
9: Redox Chemistry
10: Adsorption Reactions
Water/Wastewater

NEW
International Edition

WATER AND WASTEWATER ENGINEERING
by Mackenzie L. Davis, Michigan State University-East Lansing
2011 (January 2010) / Hardcover / 1024 pages
ISBN: 9780071289245 [IE]
http://www.mhhe.com/davis1e

Water and Wastewater Engineering integrates theory and design. Fundamental environmental engineering principles are used as the foundation for rigorous design of conventional and advanced water and wastewater treatment processes. Reverse osmosis, membrane filtration, UV disinfection, biological nutrient removal and membrane bioreactors represent a small sample of the processes included.

Water and Wastewater Engineering follows the flow of water through a water treatment plant and the flow of wastewater through a wastewater treatment plant. The design of unit water treatment processes includes coagulation/flocculation, softening, ion exchange, reverse osmosis, sedimentation, granular filtration, membrane filtration, disinfection, and residuals management. In a similar fashion, the design of unit wastewater processes follows the flow of wastewater through a plant. The design of unit wastewater treatment processes includes preliminary treatment, primary treatment, suspended growth secondary treatment including biological nutrient removal, and membrane biological reactors. Residuals management includes applicable methods to meet the 503 rules. The text includes include appropriate regulatory constraints and highlights safety issues. Hints from the field bring to the student real-life experience in solving technical issues.

FEATURES
- In depth coverage of water treatment and modern treatment methods.
- Each chapter ends with a Chapter Review that is formatted for easy adaption to ABET course objectives.
- The text features 100 example problems, 500 end-of-chapter problems.
- Text website includes an instructor’s manual with problem solutions and a photo gallery of treatment plant construction and unit processes.
- A Professional Advisory Board composed of 6 licensed engineers, 2 licensed operators, and a licensed geologist reviewed the text and provided practical, up-to-date advice on current practice.
- A text website will feature instructors solution manual, image library and power points.

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Chapter 14: Primary Treatment
Chapter 15: Wastewater Microbiology
Chapter 16: Secondary Treatment of Suspended Growth Biological Processes
Chapter 17: Secondary Treatment by Attached Growth Biological Processes
Chapter 18: Secondary Setting, Disinfection, and Post Aeration
Chapter 19: Tertiary Treatment
Chapter 20: Wastewater Plant Residuals Management
Appendices

International Edition

OPEN CHANNEL HYDRAULICS
Second Edition
by Terry W. Sturm, Georgia Institute Of Technology

2010 (March 2009) / Hardcover / 576 pages
ISBN: 9780073397870
ISBN: 9780071267939 [IE]
www.mhhe.com/sturm

Open Channel Hydraulics is intended for advanced undergraduates and first-year graduate students in the general fields of water resources and environmental engineering. It offers a focused presentation of some of the most common problems encountered by practicing engineers with the inclusion of recent research advances and personal computer applications. In addition, emphasis is placed on the application of basic principles of fluid mechanics to the formulation of open channel flow problems so that the assumption and limitation of existing numerical models are made clear.

NEW TO THIS EDITION
- Chapter on 2-dimensional modeling.
- 20% more homework problems.
- Additional illustrative examples are included.

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Chapter 7 Governing Equations of Unsteady Flow
Chapter 8 Numerical Solution of the Unsteady Flow Equations
Chapter 9: Simplified Methods of Flow Routing
Chapter 10: Flow in Alluvial Channels

International Edition

PRINCIPLES OF ENVIRONMENTAL ENGINEERING & SCIENCE

Second Edition
by Mackenzie L. Davis, Michigan State University-East Lansing, and Susan J. Masten, McMaster University

2009 (January 2008) / Hardcover / 736 pages / 398 illus
ISBN: 9780073122359
ISBN: 9780071287807 [IE]

www.mhhe.com/davismasten

Principles of Environmental Engineering is intended for a course in introductory environmental engineering for sophomore- or junior-level students. The emphasis of this text is on engineering principles rather than on engineering design. Students should understand such calculus topics as differentiation, integrations, and differential equations. Principles places more emphasis on scientific principles, ethics, and safety, and focuses less on engineering design. The text exposes students to a broader range of environmental topics through separate chapters on ecosystems, geological and soil resources, and agricultural effects. This new edition includes a new chapter on Biology, updated science and technology discussions to reflect the latest trends and new case studies in each chapter.

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6 Risk Perception, Assessment and Management
7 Hydrology
8 Sustainable Energy, Mineral and Soil Resources
9 Water Quality Management
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11 Wastewater Treatment
12 Air Pollution
13 Solid Waste Management
14 Hazardous Waste Management
15 Noise Pollution
16 Ionizing Radiation
Appendix A: Properties of Air, Water, and Selected Chemicals

INTRODUCTION TO ENVIRONMENTAL ENGINEERING
Fourth Edition
by Mackenzie L. Davis, Michigan State University-East Lansing, and David A. Cornwell, Environmental Engineering & Technology

2008 (October 2006) / Hardcover / 1,024 pages
ISBN: 9780072424119
ISBN: 9780071259224 [IE]

www mhhe.com/davis

Davis and Cornwell’s Introduction to Environmental Engineering is one of the most comprehensive resources on the multiple aspects of environmental engineering, from solid waste disposal to air and noise pollution. Pedagogically oriented toward engineers, the text places a much-needed emphasis on fundamental concepts, definitions, problem-solving, and design, while providing numerous homework problems and discussion questions in each chapter. The 4th edition features completely up-to-date coverage of environmental laws, regulations, and standards, as well as the addition of a new chapter on materials and energy balances, and end of chapter computer application problems. A discussion on environmental ethics complete with case studies and homework problems presents the legal framework that governs environmental engineering design.

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CIVIL ENGINEERING

International Edition

CHEMISTRY FOR ENVIRONMENTAL ENGINEERING AND SCIENCE
Fifth Edition
by Clair N. Sawyer (deceased), Perry L. McCarty, Stanford University, and Gene F. Parkin, University of Iowa-Iowa City
2003 / Hardcover / 768 pages
ISBN: 9780072480665
ISBN: 9780071230452 [IE]
http://www.mhhe.com/sawyer/

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34 Trace Contaminants
Appendix A Thermodynamic Properties (25 degrees C)
Appendix B Acronyms, Roman Symbols, and Greek Symbols

International Edition

WASTEWATER ENGINEERING TREATMENT AND REUSE
Fourth Edition
by Metcalf & Eddy, Inc., and George Tchobanoglous, University of California, Davis; Frank L. Burton and H. David Stensel, University of Washington
2003 / Hardcover / 1,848 pages
ISBN: 9780070418783
ISBN: 9780071241403 [IE]
www.mhhe.com/metcalf

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Chapter 1: Wastewater Engineering
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Chapter 11: Advanced Wastewater Treatment
Chapter 12: Disinfection Process
Chapter 13: Water Reuse
Chapter 14: Treatment, Reuse, and Disposal of Solids and Biosolids
Chapter 15: Issues Related To Treatment Plant Performance

International Edition

WATER CHEMISTRY
by Mark M Benjamin, University of Washington
2002 / 688 pages / Hardcover
ISBN: 9780072383904 (Out-of-Print)
ISBN: 9780071202398 [IE]
www.mhhe.com/engsci/civil/benjamin

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1: Concepts in Aquatic Chemistry
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4: Acids and Bases, Part 2. Approximate Solutions to Acid/Base Problems Using Spreadsheets and Log C-pH Diagrams
5: Titrations and Buffers
6: Software for Solving Chemical Equilibrium Problems
7: Gas/Liquid Equilibrium
8: Chemistry of Metals in Aqueous Systems
9: Redox Chemistry
10: Adsorption Reactions
International Edition

HAZARDOUS WASTE MANAGEMENT
Second Edition
by Michael D. LoGrego, ERM, Inc., Bucknell University; Philip L. Bucking-ham, ERM, Inc.; Jeffery C. Evans, Bucknell University
2001 / Hardcover / 1,184 pages
ISBN: 9780070393653 (Out-of-Print)
www.mhhe.com/engcs/civil/logrego

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 15 Site and Subsurface Characterization
 16 Remedial Technologies
 17 Evaluation and Selection of Remedial Actions and Corrective Measures
Appendices
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  B - Contaminant Properties
  C - Thermodynamic Properties
  D - Conversion Factors

International Edition

ENVIRONMENTAL BIOTECHNOLOGY
Principles and Applications
by Bruce E. Rittman, Northwestern University, and Perry McCarry, Stan-ford University
2001 / 768 pages / Hardcover
ISBN: 9780072345537 (Out of Print)
ISBN: 9780071181846 [IE]
www.mhhe.com/engcs/civil/rittman

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1 Basics of Microbiology
2 Stoichiometry and Bacterial Energetics
3 Microbial Kinetics
4 Biofilm Kinetics
5 Reactors
6 Complex Systems
7 The Activated Sludge Process
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10 Nitrification
11 Denitrification
12 Phosphorus Removal
13 Drinking Water Treatment

International Edition

SMALL AND DECENTRALIZED WASTEWATER MANAGEMENT SYSTEMS
by Ron Crites, Brown and Caldwell, George Tchobanoglous, University of California—Davis
1998 / 600 pages
ISBN: 9780072890877 (Out of Print)
ISBN: 9780071167840 [IE]

CONTENTS
1 Decentralized Wastewater Management Systems and Management
2 Constituents in Wastewater
3 Fate of Wastewater Constituents in the Environment
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5 Wastewater Pretreatment Operations and Processes
6 Alternative Wastewater Collection Systems
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8 Pond Treatment Systems
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10 Land Treatment Systems
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12 Effluent Repurification and Reuse
13 Effluent Reuse and Disposal for Decentralized Systems
14 Biosolids and Septage Management
15 Management of Decentralized Wastewater Systems
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International Edition

ENVIRONMENTAL IMPACT ASSESSMENT
Engineering Principles and Management
Issues
Second Edition
by Larry Canter, University of Oklahoma
1996 / 480 pages / Hardcover
ISBN: 9780070097674 (Out-of-Print)
ISBN: 9780071141031 [IE]

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1 National Environmental Policy Act and Its Implementation
2 Planning and Management of Impact Studies
3 Simple Methods for Impact Identification Matrices, Networks and Checklists
4 Description of Environmental Setting
5 Environmental Indicators and Indices for Describing the Affected Environment
6 Prediction and Assessment of Impacts on the Air Environment
7 Prediction and Assessment of Impacts on the Surface Water Environment
8 Prediction and Assessment of Impacts on the Soil and Ground Water Environment
9 Prediction and Assessment of Impacts on the Noise Environment
10 Prediction and Assessment of Impacts on the Biological Environment
11 Habitat Methods for Biological Impact Prediction and Assessment
12 Prediction and Assessment of Impacts on the Cultural (Historical/Archaeological) Environment
13 Prediction and Assessment of Visual Impacts
14 Prediction and Assessment of Impacts on the Socioeconomic Environment
15 Decision Methods for Evaluation of Alternatives
16 Public Participation in Environmental Decision Making
17 Environmental Monitoring
Appendices

International Edition

INTEGRATED SOLID WASTE MANAGEMENT
by George Ichobanoglos, University of California at Davis, Hilary Theisen, Brown and Caldwell Consulting Engineers; Samuel A. Vigil, California Polytechnic State University
1993 / Hardcover / 992 pages
ISBN: 9780070632370 (Out of Print)
ISBN: 9780071128650 [IE]

CONTENTS
Part I • Perspectives
1 Evolution of Solid Waste Management
2 Legislative Trends and Impacts
Part II • Sources, Composition, and Properties of Solid Waste
3 Sources, Types, and Composition of Municipal Solid Waste
4 Physical, Chemical, and Biological Properties of Municipal Solid Waste
5 Sources, Types and Properties of Hazardous Wastes Found In Municipal Solid Waste
Part III • Engineering Principles
6 Generation of Solid Wastes
7 Waste Handling and Separation, Storage, and Processing at the Source
8 Collection of Solid Wastes
9 Separation and Processing and Transformation of Waste Materials
10 Transfer and Transport
11 Disposal and Solid Wastes and Residual Matter

International Edition

WATER SUPPLY AND SEWERAGE
Sixth Edition
by Terence McGhee, Lafayette College
1991 / Softcover / 704 pages
ISBN: 9780071008235 [IE]

CONTENTS
1 Introduction
2 Quantity of Water and Sewage
3 Hydraulics
4 Rainfall and Runoff
5 Groundwater
6 Aqueducts and Water Pipes
7 Collection and Distribution of Water
8 Quality of Water Supplies
9 Clarification of Water
10 Filtration of Water
11 Treatment of Water
12 Sewage
13 Sewage Flows
14 Sewer Materials
15 Sewer Appurtenances
16 Design of Sewer Systems
17 Sewer Construction and Maintenance
18 Characteristics of Sewage
19 Sewage Disposal
20 Preliminary Sewage Treatment
21 Primary Sewage Treatment
22 Secondary Sewage Treatment
23 Sludge Treatment and Disposal
24 Advanced Wastewater Treatment
25 Miscellaneous Wastewater Treatment Techniques.
26 Financial Considerations

Part IV • Separation, Transformation, and Recycling of Waste Materials
12 Materials Separation and Processing Technologies
13 Thermal Conversion Technologies
14 Biological and Chemical Conversion Technologies
15 Recycling of Materials Found in Municipal Solid Waste
Part V • Closure, Restoration, and Rehabilitation of Landfills
16 Remedial Actions for Abandoned Waste Disposal Sites
Part VI • Solid Waste Management and Planning Issues
17 Meeting Federal and State Mandated Diversion Goals
18 Implementation of Solid Waste Management Options
19 Planning, Siting, and Permitting of Waste Management Facilities
Appendices
International Edition

ENVIRONMENTAL ENGINEERING
by Howard S. Peavy, Montana State University; Donald R. Rowe, Western Kentucky University; George Tchobanoglous, University of California
1985 / Softcover / 640 pages
ISBN: 9780071002318 [IE]

CONTENTS
1 Introduction
2 Water Quality: Definitions, Characteristics, and Perspectives
3 Water Purification
4 Engineered Systems for Wastewater Treatment and Disposal
5 Environmental Engineering Hydraulics Design
6 Air Quality Definitions, Characteristics, and Perspectives
7 Engineered Systems for Air Pollution
8 Solid Waste Definitions, Characteristics, and Perspectives
9 Engineered Systems for Solid Waste Management
10 Engineered Systems for Resource and Energy Recovery

Air Pollution

International Edition

AIR POLLUTION CONTROL ENGINEERING
Second Edition
by Noel deNerder, University of Utah
2000 / 608 pages
ISBN: 9780070393677 (Out-of-Print)
ISBN: 9780071162074 [IE]

CONTENTS
Chapter 1: Introduction to Air Pollution Control
Chapter 2: Air Pollution Effects
Chapter 3: Air Pollution Control Laws and Regulations, Air Pollution Control Philosophies
Chapter 4: Air Pollution Measurements, Emission Estimates
Chapter 5: Meteorology for Air Pollution Control Engineers
Chapter 6: Air Pollutant Concentration Models
Chapter 7: General Ideas in Air Pollution Control
Chapter 8: The Nature of Particulate Pollutants
Chapter 9: Control of Primary Particulates
Chapter 10: Control of Volatile Organic Compounds (VOCs)
Chapter 11: Control of Sulfur Oxides
Chapter 12: Control of Nitrogen Oxides
Chapter 13: The Motor Vehicle Problem
Chapter 14: Air Pollutants and Global Climate
Chapter 15: Other Topics
Appendices
Answers to Selected Problems

Hazardous Waste

International Edition

WASTEWATER ENGINEERING TREATMENT AND REUSE
Fourth Edition
by Metcalf & Eddy, Inc., and George Tchobanoglous, University of California, Davis; Frank L. Burton and H David Stensel, University of Washington
2003 / Hardcover / 1,848 pages
ISBN: 9780070418783
ISBN: 9780071241403 [IE]

www.mhhe.com/metcalf

CONTENTS
Chapter 1: Wastewater Engineering
Chapter 2: Constituents in Wastewater
Chapter 3: Analysis and Selection of Wastewater Flowrates and Constituent Loadings
Chapter 4: Introduction to Process Analysis and Selection
Chapter 5 Physical Unit Operations
Chapter 6 Chemical Unit Processes
Chapter 7: Fundamentals of Biological Treatment
Chapter 8: Aerobic Suspended Growth Biological Treatment Processes
Chapter 9: Aerobic Attached Growth Biological Treatment Processes
Chapter 10: Anaerobic Suspended and Attached Growth Biological Treatment Processes
Chapter 11: Advanced Wastewater Treatment
Chapter 12: Disinfection Process
Chapter 13: Water Reuse
Chapter 14: Treatment, Reuse, and Disposal of Solids and Biosolids
Chapter 15: Issues Related To Treatment Plant Performance
CIVIL ENGINEERING

HAZARDOUS WASTE MANAGEMENT
Second Edition
by Michael D. LaGrega, ERM, Inc., Bucknell University; Philip L. Bucking
ham, ERM, Inc.; Jeffery C. Evans, Bucknell University
2001 / Hardcover / 1,184 pages
ISBN: 9780070393653 (Out-of-Print)
www.mhhe.com/engs/civil/lagrega

CONTENTS
I Fundamentals
1 Hazardous Waste
2 The Legal Framework
3 Process Fundamentals
4 Fate and Transport of Contaminants
5 Toxicology
II Current Management Practices
6 Environmental Audits
7 Pollution Prevention
8 Facility Development and Operations
III Treatment and Disposal Methods
9 Physico-Chemical Processes
10 Biological Methods
11 Stabilization and Solidification
12 Thermal Processes
13 Land Disposal
IV Site Remediation
14 Quantitative Risk Assessment
15 Site and Subsurface Characterization
16 Remedial Technologies
17 Evaluation and Selection of Remedial Actions and Corrective
Measures
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A - Basel Convention
B - Contaminant Properties
C - Thermodynamic Properties
D - Conversion Factors

NEW

International Edition

OPEN CHANNEL HYDRAULICS
Second Edition
by Terry W. Sturm, Georgia Institute Of Technol
ogy
2010 (March 2009) / Hardcover / 576 pages
ISBN: 9780073397870
ISBN: 9780071267939 [IE]
www.mhhe.com/sturm

Open Channel Hydraulics is intended for advanced undergraduates
and first-year graduate students in the general fields of water resourc
es and environmental engineering. It offers a focused presentation
of some of the most common problems encountered by practicing
engineers with the inclusion of recent research advances and per
sonal computer applications. In addition, emphasis is placed on the
application of basic principles of fluid mechanics to the formulation
of open channel flow problems so that the assumption and limitation
of existing numerical models are made clear.

NEW TO THIS EDITION
✓ Chapter on 2-dimensional modeling.
✓ 20% more homework problems.
✓ Additional illustrative examples are included.

CONTENTS
Chapter 1 Basic Principles
Chapter 2 Specific Energy
Chapter 3 Momentum
Chapter 4 Uniform Flow
Chapter 5 Gradually Varied Flow
Chapter 6 Hydraulic Structures
Chapter 7 Governing Equations of Unsteady Flow
Chapter 8 Numerical Solution of the Unsteady Flow Equations
Chapter 9 Simplified Methods of Flow Routing
Chapter 10 Flow in Alluvial Channels
In this third edition, the scope of the book is defined to provide source material in the form of a textbook that would meet all the requirements of the undergraduate course and most of the requirements of a post graduate course in Open channel hydraulics as taught in Indian universities. Certain topics have been elaborated and certain portions deleted, more solved examples thus overall making the content much more suitable to today's requirements.

CONTENTS
1. Flow in Open Channels
2. Energy-Depth Relationships
3. Uniform Flow
4. Gradually Varied Flow Theory
5. Gradually Varied Flow Computations
6. Rapidly Varied Flow-1 – Hydraulic Jump
7. Rapidly Varied Flow-2
8. Spatially Varied Flow
9. Supercritical-Flow Transitions
10. Unsteady Flows
11. Hydraulic of Mobile Bed Channels

Meant for the undergraduate students of Civil Engineering, written in a simple and lucid style, this book focuses on the Indian scenario of water resources with orientation to tropical climates. Comprehensive coverage and clear explanations make the book very student friendly.

CONTENTS
1. Introduction
2. Precipitation
3. Abstractions from Precipitation
4. Streamflow Measurement
5. Runoff
6. Hydrographs
7. Floods
8. Flood Routing
9. Groundwater
10. Erosion and Reservoir Sedimentation
Appendix A: Additional Reference, Some Useful Websites, Abbreviations
Appendix B: Conversation Factors Answers to Objective Questions

PART ONE COMPLETELY-MIXED SYSTEMS
PART TWO INCOMPLETELY-MIXED SYSTEMS
PART THREE MODELING ENVIRONMENTS
PART FOUR DISSOLVED OXYGEN AND BACTERIA
PART FIVE EUTROPHICATION AND TEMPERATURE
PART SIX CHEMISTRY AND TOXIC SUBSTANCES
APPENDICES
CIVIL ENGINEERING

APPLIED HYDROLOGY
by Ven T. Chow, deceased; David R. Maidment, University of Texas at Austin; Lawrence W. Mays, Arizona State University
1988 / Hardcover / 572 pages
ISBN: 9780070108103 (Out-of-Print)
ISBN: 9780071001748 [IE]
CONTENTS
Part I: Hydrologic Processes, Introduction
  Chapter 1 Hydrologic Processes
  Chapter 2 Atmospheric Water
  Chapter 3 Subsurface Water
  Chapter 4 Surface Water
  Chapter 5 Hydrologic Measurement
Part II: Hydrologic Analysis
  Chapter 6 Unit Hydrograph
  Chapter 7 Lumped Flow Routing
  Chapter 8 Distributed Flow Routing
  Chapter 9 Dynamic Wave Routing
  Chapter 10 Hydrologic Statistics
  Chapter 11 Frequency Analysis
Part III: Hydrologic Design
  Chapter 12 Design Storms
  Chapter 13 Design Flows

Transportation
(Introduction)

INTRODUCTION TO TRANSPORTATION ENGINEERING
Second Edition
by James H. Banks, San Diego State University
2002 / 512 pages / Hardcover
ISBN: 9780072431889 (Out-of-Print)
ISBN: 9780071240345 [IE]
www.mhhe.com/engcs/civil/banks
CONTENTS
1 Introduction
2 Transportation System Issues and Challenges
Exercise
3 Introduction to Physical Design of Transportation Facilities
4 Geometric Design
5 Earthwork
6 Surfaces and Guideways
7 Mitigation of Environmental Impacts
8 Traffic Analysis Techniques
9 Traffic Flow
10 Capacity and Level of Service
11 Traffic Control
12 Transit Operations
13 Transportation Demand Analysis
14 Transportation Planning
15 Transportation Project Evaluation
Summary

International Edition

URBAN TRANSPORTATION PLANNING
Second Edition
by Michael D Meyer, Georgia Institute of Technology and Eric J Miller, University of Toronto
2001 / 576 pages / Hardcover
ISBN: 9780072423327 (Out-of-Print)
ISBN: 978007071200004 [IE]
www.mhhe.com/engcs/civil/meyer
CONTENTS
1 Context and Definition
2 System and Travel Characteristics
3 Decisionmaking
4 Data
5 Urban Activity Analysis
6 Demand Analysis
7 Supply Analysis
8 Evaluation
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10 Site Impact Analysis

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Professional References

DESIGN OF REINFORCED MASONRY STRUCTURES
Second Edition
by Narendra Tal, California State University-Los Angeles
2010 (June 2010) / Hardcover / 704 pages
ISBN: 9780071475556
(A Professional Reference Title)
The Second Edition of Design of Reinforced Masonry Structures presents the latest methods and code requirements for designing structures with reinforced masonry. Well-referenced and packed with over 425 illustrations, this guide now contains new International Building Code 2006 and MSJC 2005 information, strength design philosophy for reinforced masonry structures based on ASCE 7-05 design loads for wind and seismic design, and a wealth of new examples and problems.

Written by an internationally acclaimed author, this essential professional tool takes you step-by-step through the art, science, and engineering of materials of masonry construction; flexural analysis and design; walls under axial and transverse loads; and more.

CONTENTS
Chapter 1. Introduction;
Chapter 2. Masonry Units and Their Applications;
Chapter 3. Materials of Masonry Construction;
Chapter 4. Flexural Analysis and Design;
Chapter 5. Columns;
Chapter 6. Walls under Axial and Transverse Loads;
Chapter 7. Shear Walls;
Chapter 8. Retaining and Subterranean Walls;
Chapter 9. Construction Aspects;
Chapter 10. Design of Masonry Buildings;
Appendices

CONSTRUCTION PURCHASING & SUPPLY CHAIN MANAGEMENT
by W.C. Benton, and Linda McHenry
2010 (August 2009) / Hardcover / 266 pages
ISBN: 9780071548854
(A Professional Reference Title)
Develop a highly efficient construction supply chain management (CSCM) solution that decreases risk and increases profitability. This authoritative volume provides proven strategies for the lean construction approach, including just-in-time purchasing, supplier evaluation, subcontractor selection, subcontractor relationship management, equipment acquisition, information sharing, and project quality management. There are numerous illustrations and ready-to-use forms and a step-by-step economic evaluation for equipment acquisition.

Construction Purchasing and Supply Chain Management explains how to achieve maximum integration with upstream and downstream supply chain members using the latest technologies. You will be able to establish a strategic CSCM framework to meet the budgetary and scheduling goals of any project. This comprehensive, step-by-step guide to CSCM is useful for project owners, design engineers, architects, prime contractors, subcontractors, suppliers, and construction managers involved in construction projects throughout the world.

CONTENTS
Preface
Acknowledgments
Chapter 1. Introduction to Construction Purchasing and Supply Chain Management
Chapter 2. The Construction Supply Sourcing Process and Procedures
Chapter 3. Construction Supply Chain Relationship Management
Chapter 4. Construction Supplier Selection and Evaluation
Chapter 5. Purchasing Subcontracting Services
Chapter 6. Construction Equipment Planning, Purchasing, and Leasing
Chapter 7. Construction Supply Chain Complexity, Profitability, and Information Sharing
Chapter 8. Construction Supply Chain Management
Appendix A. Joint Venture Agreement
Appendix B. Subcontractor’s Bid Package and Pre-Bid Invitation
Appendix C. CD 300, Standard Form of Tri-Party Agreement for Collaborative Project Delivery
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PRACTICAL GEOTECHNICAL ENGINEERING DESIGN
by Morris M. Dirnberger
2010 (July 2010) / 496 pages
ISBN: 9780071488679
(A Professional Reference Title)
FEATURES
Quick review of geotechnical theories and design methods.
Focus on geotechnical practice as theory combined with judgment.
Geotechnical engineering design data, equations, calculations, and more.

CONTENTS
Chapter 1- Introduction
Chapter 2- Exploration and Testing
Chapter 3- Shear Strength
Chapter 4- Lateral Loads < and Distribution Stress-5>
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Chapter 7- Slope Stability
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heating, and humidity control systems. Using thermal energy from power generation equipment for cooling, these systems can increase energy efficiency by as much as 85 percent by operating on-site CHP (combined heat and power) facilities. These plant managers with all of the information needed to design, construct, and operate on-site CHP (combined heat and power) facilities. These systems can increase energy efficiency by as much as 85 percent by using thermal energy from power generation equipment for cooling, heating, and humidity control systems.

Two-thirds of all fuel used to make electricity is generally wasted by venting unused thermal energy from power generation equipment into the air or discharging it into water streams. The average efficiency of power generation has remained around 33 percent since 1960. Sustainable On-Site CHP Systems provides design engineers and plant managers with all of the information needed to design, construct, and operate on-site CHP (combined heat and power) facilities. These systems can increase energy efficiency by as much as 85 percent by using thermal energy from power generation equipment for cooling, heating, and humidity control systems.

Sustainable On-Site CHP Systems Design, Construction, and Operations

by Milton Zeckler and Lucas Yaman
2010 (January 2010) / Hardcover / 512 pages
ISBN: 978-0-07-160317-1
(A Professional Reference Title)

A hands-on guide to dramatically reducing energy use in commercial, institutional, residential, educational, and industrial buildings.

Two-thirds of all fuel used to make electricity is generally wasted by venting unused thermal energy from power generation equipment into the air or discharging it into water streams. The average efficiency of power generation has remained around 33 percent since 1960.

Sustainable On-Site CHP Systems provides design engineers and plant managers with all of the information needed to design, construct, and operate on-site CHP (combined heat and power) facilities. These systems can increase energy efficiency by as much as 85 percent by using thermal energy from power generation equipment for cooling, heating, and humidity control systems.
How to Plan, Contract, and Build Your Own Home
Fifth Edition
by Richard M. Scatella, and Dave Heberle
2010 (May 2010) / Softcover / 608 pages
ISBN: 9780071603300
(A Professional Reference Title)

Contents
Part 1: Green Home Design and Construction;
Chapter 1. The Green Movement;
Chapter 2. Green Home Construction Systems, Materials, and Components;
Chapter 3. Green Construction Strategies;
Chapter 4. Planning Your Home’s Design and Construction;
Part 2: What To Build;
Chapter 5. A House Divided;
Chapter 6. House Styles and Types;
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Chapter 9. Prints and Drawings;
Part 3: How To Build It;
Chapter 11. Footers and Foundations;
Chapter 12. Floor Framing;
Chapter 13. Wall Framing;
Chapter 14. Roof Framing;
Chapter 15. Roof Exterior Finishing;
Chapter 16. Exterior Wall Finishing;
Chapter 17. Stairs;
Chapter 18. Windows;
Chapter 19. Doors;
Chapter 20. Garages;
Chapter 21. Plumbing;
Chapter 22. Electric;
Chapter 23. Lighting;
Chapter 24. Heating and Cooling;
Chapter 25. Insulation;
Chapter 26. Wall Covering and Trim;
Chapter 27. Bathrooms;
Chapter 28. Kitchens;
Chapter 29. Floor Coverings;
Chapter 30. Home Environmental Issues;
Part 4: Where to Build It;
Chapter 31. City, Suburbs, or Country;
Chapter 32. Selecting a Building Site;
Chapter 33. Orientation, Positioning, and Landscaping;
Chapter 34. Driveways, Sidewalks, and Patios;
Part 5: Who Should Build It;
Chapter 35. Selecting a Contractor;
Chapter 36. Working with Your Contractor;
Chapter 37. Setting Up Your Maintenance Program;
Appendix: Listings of green resources: websites, publications, and contact information

Civil Engineering

Moving the Earth
Sixth Edition
by Herbert L. Nicholls, and David Day
2010 (May 2010) / Hardcover / 1280 pages
ISBN: 9780071502672
(A Professional Reference Title)
The Sixth Edition of Moving the Earth provides hands-on information about all current excavation practices and regulations. The book covers the latest excavation techniques, machines and their operation, problems that arise in excavation work, the application of different types of equipment, as well as costs and management. From site preparation to blasting and tunneling, from pneumatic drills to the largest power shovels, this comprehensive, step-by-step reference explains every kind of excavating project, together with guidance on optimizing the machines and vehicles involved.

CPM in Construction Management
Seventh Edition
by Fredric L. Plotnick, and James J. O’Brien
2010 (August 2009) / Hardcover / 736 pages
ISBN: 9780071636643
(A Professional Reference Title)
A $2000-retail-value, unrestricted license to this world-class product is provided on the included CD-ROM. No limits to number of activities, time for evaluation, or usage. With instruction on CPM and powerful software, you are ready for business now.

Specifications of major engineering firms call for the project CPM to be prepared and administered in accordance with this text, which also serves as a primary resource for PSP and PMI-SP exam preparation. With case studies of major global construction projects and a “John Doe” example project that’s followed throughout, this book will simplify your application of CPM. Cut project time to the minimum. Determine which deliveries to expedite, and which may slide. Know instantly the impact of change—and how to thrive while others fail. Understand CPM’s courtroom evidentiary value—and watch disputes be amicably resolved. This updated classic is the construction tool that makes everything around you work better, faster, and more economically.

Contents
Part 1: Introduction to CPM Planning and Scheduling
Part 2. The Theory of CPM Planning and Scheduling
Part 3: The Tools of CPM Planning and Scheduling
Part 4: The Practice of CPM Planning and Scheduling
Part 5: The Practice of CPM Scheduling
Part 6: Advanced Topics
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CIVIL ENGINEERING

MECHANICS OF ASPHALT
Microstructure and Micromechanics
by Linbing Wang
2010 (April 2010) / Hardcover / 464 pages
ISBN: 9780071498548
(A Professional Reference Title)

A state-of-the-art sourcebook for solving engineering problems in the mix design, construction, and evaluation of asphalt pavements

Written by an internationally renowned expert on asphalt mechanics, this authoritative guide equips you with the latest tools for solving a wide range of engineering problems in the mix design, construction methods, and performance evaluation of today's asphalt pavements. Using 150 illustrations and international units throughout, Mechanics of Asphalt fully enables readers to design and analyze flexible pavements and perform forensic studies; use simulation techniques to adjust and control construction quality; achieve the best possible mix designs, and access innovative approaches in research and development. The book covers the fundamentals of asphalt properties and characterization; constitutive modeling & model calibration; computational techniques; multiscale and coupled phenomena; and applications of advanced modeling and simulation.

CONTENTS
Fundamentals of Asphalt Properties and Characterization
Constitutive Modeling & Model Calibration
Computational Techniques
Multiscale and Coupled Phenomena
Applications of Advanced Modeling and Simulation

RADIANT FLOOR HEATING
Second Edition
by R. Dodge Woodson
2010 (January 2010) / Hardcover / 304 pages
ISBN: 9780071599351
(A Professional Reference Title)

In this second edition, master plumber and long-time contractor R. Dodge Woodson gives contractors and electricians the latest information on installing, testing, and debugging radiant heat systems, plus a brand-new chapter on alternative fuel sources. Radiant Floor Heating, Second Edition covers new material options and installation procedures, updated code information, and the latest in piping and heating equipment. Revised illustrations featuring modern products are included.

CONTENTS
Ch 1. Benefits of Radiant Floor Heating
Ch 2. Developing a Work Schedule
Ch 3. Combination Heating Systems
Ch 4. Manifolds and Heating Zones
Ch 5. Making the Most of Material Options
Ch 6. Boiler Basics
Ch 7. Circulating Pumps
Ch 8. System Controls
Ch 9. Heating System Components
Ch 10. Tanks for Domestic Water and Expansion
Ch 11. Simple Slab Heating Systems
Ch 12. Using a Dry Piping System
Ch 13. Air Removal
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ENERGY CONSERVATION IN WATER AND WASTEWATER FACILITIES--MOP 32
by Water Environment Federation
2010 (November 2009) / Hardcover / 400 pages
ISBN: 9780071667944
(A Professional Reference Title)

Updated to include both drinking water treatment as well as wastewater, this authoritative guide from the Water Environment Federation presents new opportunities for improving energy efficiency in plant operations. This manual represents the collected background and experience of professionals active in the energy conservation area.

Each of the chapters in Energy Conservation in Water and Wastewater Facilities discusses basic principles and concepts of energy requirements and potential sources of inefficiency. This is followed by recommended energy conservation measures for specific equipment or processes. Learn how to prevent major repair issues by managing regular maintenance processes from this comprehensive volume.

CONTENTS
Preface;
List of Figures;
List of Tables;
Chapter 1. Energy Efficiency;
Chapter 2. Utility Billing Procedures and Incentives;
Chapter 3. Electric Motors and Transformers;
Chapter 4. Pumps;
Chapter 5. Variable Controls;
Chapter 6. Energy Use In Water Treatment Plants;
Chapter 7. Energy Utilization in Wastewater Treatment Processes;
Chapter 8. Aeration Systems;
Chapter 9. Blowers;
Chapter 10. Solids Processes;
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Appendix B. Equations for Converting from English Units to Metric Units;
Appendix C. Estimates of Electricity Used in Wastewater Treatment;
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A BUILDER’S GUIDE TO WELLS AND SEPTIC SYSTEMS
Second Edition
by R. Dodge Woodson
2010 (September 2009) / Softcover / 304 pages
ISBN: 9780071625975
(A Professional Reference Title)

Don’t let septic systems sink your budget! This essential guide is filled with expert advice on selecting and installing high-performance, cost-efficient wells and septic systems that will boost your bottom line.


CONTENTS
Introduction;
Acknowledgments;
Chapter 1: Water Wells Can Cost You Plenty;
Chapter 2: Septic Systems Can Sink You!;
Chapter 3: Evaluating Sites for Well Locations;
Chapter 4: Evaluating Sites for Septic Locations;
Chapter 5: Taking Bids for the Work;
Chapter 6: Soil Studies;
Chapter 7: Septic Designs;
Chapter 8: Code-Related Issues;
Chapter 9: Drilled Wells;
Chapter 10: Dug Wells;
Chapter 11: Alternative Water Sources;
Chapter 12: Gravel-and-Pipe Septic Systems;
Chapter 13: Chamber-Type Septic Systems and Other Special-Use Systems;
Chapter 14: Pump Stations;
Chapter 15: Gravity Systems;
Chapter 16: Controlling Construction Costs;
Chapter 17: Common Problems with Well Installations;
Chapter 18: Septic Troubles;
Chapter 19. Know Your Limitations;
Chapter 20. Landscaping Septic Systems;
Appendix A. Definitions;
Appendix B. Additional Resources;
Appendix C. Facts, Figures, and Measurements;
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INDUSTRIAL WATER QUALITY
Fourth Edition
by W. Wesley Eckenfelder, Jr., Davis L. Ford, and Andrew Englande, Jr
2009 (September 2008) / Hardcover / 956 pages
ISBN: 9780071548663
(A Professional Reference Title)

Turn to the Fourth Edition of Industrial Water Quality for guidance on state-of-the-art methods for optimizing or upgrading existing wastewater treatment systems, as well as selecting the best treatment options to solve specific wastewater problems. This hands-on tool reflects today’s more stringent water-quality regulations and the new technologies developed to meet them. Filled with examples and case studies from a variety of industries, the book covers reverse osmosis or alternative membrane processes and discusses Biological Nutrient Removal (BNR) processes.

CONTENTS
Chapter 1. Source and Characteristics of Industrial Wastewaters
Chapter 2. Wastewater Treatment Processes
Chapter 3. Pre- and Primary Treatment
Chapter 4. Coagulation, Precipitation and Metals Removal
Chapter 5. Aeration and Mass Transfer
Chapter 6. Principles of Aerobic Biological Oxidation
Chapter 7. Biological Wastewater Treatment Processes
Chapter 8. Adsorption
Chapter 9. Ion Exchange
Chapter 10. Chemical Oxidation
Chapter 11. Sludge Handling and Disposal
Chapter 12. Miscellaneous Treatment Processes
Chapter 13. Pollution Sources and Control of Residuals from Exploration and Production of Oil and Natural Gas
Chapter 14. Chlorinated Compounds, VOCs, and Odor Control
Chapter 15. Waste Minimization and Water Reuse
Chapter 16. Allocation of Superfund Disposal Site Response Costs
Chapter 17. Industrial Pretreatment
Chapter 18. Environmental Economics
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HIGHWAY ENGINEERING HANDBOOK
Third Edition
by Roger L. Brockenbrough, Sr. Ranch, Consultant, Uxu
May 2009 / Hardcover / 888 pages
ISBN: 9780071597630
(A Professional Reference Title)

Maintaining and improving the nation’s infrastructure is one of the most important challenges facing the U.S., and the primary focus of this challenge continues to be on highways and bridges. Highway Engineering Handbook, Third Edition provides the full scope of current information necessary for effective and cost-conscious contemporary highway design, maintenance, replacement, and repair. The new edition of the classic reference has been updated to reflect new engineering and building developments, the most current methods, as well as references to the latest standards and policies of the American Association of State Highway and Transportation Officials (AASHTO). Updates include new Load and Resistance Factor Design (LRFD) methods; new design methods and improvements in materials for pipes; new developments in sound barriers and lighting requirements; improvements in safety systems; and more.
GROUNDWATER RESOURCES
by Neven Krestic
2009 (September 2008) / Hardcover / 852 pages
ISBN: 9780071492737
(A Professional Reference Title)
Groundwater Sustainability is a reliable, one-stop guide containing all the information you’ll need to succeed in your groundwater management and development projects. It covers virtually every aspect of the subject, from how to characterize groundwater and evaluate its resources to determining the interactions between surface water and groundwater. Packed with hundreds of illustrations, this expansive guide reviews both established and innovative aquifer restoration techniques and technologies, including the control and remediation of contaminant sources and groundwater contaminant plumes. You’ll also find valuable information regarding resource augmentation, the engineering necessary for resource development, and building comprehensive databases for efficient, cost-effective assessment. Written in an inviting-to-read style by a recognized expert in the field, Groundwater Sustainability provides the last word on the all-important subject of how to maintain and manage the most precious natural resource.

CONTENTS
Chapter 1. Global Freshwater Resources and Their Use
Chapter 2. Groundwater System
Chapter 3. Groundwater Recharge
Chapter 4. Climate Change
Chapter 5. Groundwater Quality
Chapter 6. Groundwater Treatment
Chapter 7. Groundwater Development
Chapter 8. Groundwater Management
Chapter 9. Groundwater Restoration
Appendix A: Values of W(u) for Fully Penetrating Wells in a Confined, Isotropic Aquifer
Appendix B1: Unit Conversion Table for Length, Area, and Volume
Appendix B2: Unit Conversion Table for Flow Rate
Appendix B3: Unit Conversion Table for Hydraulic Conductivity and Transmissivity
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BURIED PIPE DESIGN
Third Edition
by A. P. Moser, Utah State University—Logan, and Steve Folkman
2009 (July 2008) / Hardcover / 601 pages
ISBN: 9780071476898
(A Professional Reference Title)
This brand-new edition of Buried Pipe Design helps you analyze the performance of a wide range of pipes, so you can determine the proper pipe and installation system for the job. Covering almost every type of rigid and flexible pipe, this unique reference identifies and describes factors involved in working with sewer and drain lines, water and gas mains, subway tunnels, culverts, oil and coal slurry lines, and telephone and electrical conduits. It provides clear examples for designing new municipal drinking and wastewater systems or rehabilitating existing ones that will last for many years on end. Comprehensive in scope and meticulously detailed in content, this is the pipe design book you’ll want for a reference.

CONTENTS
Chapter 1. Introduction and Overview
Chapter 2. External Loads
Chapter 3. Design of Gravity Flow Pipes
Chapter 4. Design of Pressure Pipes
Chapter 5. Rigid Pipe Products
Chapter 6. Steel and Ductile Iron Flexible Pipe Products
Chapter 7. Plastic Flexible Pipe Products
Chapter 8. Pipe Installation and Trenchless Technology

MODELING OF ASPHALT CONCRETE
by Y. Richard Kim
2008 (June 2008) / Hardcover / 320 pages / 300 illus
ISBN: 978-0-07-146462-8
(A Professional Reference Title)
Modeling of Asphalt Concrete is an expert guide to developing more durable and cost-effective asphalt pavements. This well-illustrated guide presents in-depth coverage of the very latest materials, methods, tools, and modeling techniques, with emphasis placed on the use of custom-made asphalt mixes for specific geographic/climatic requirements.

CONTENTS
Part 1: Asphalt Rheology
Part 2: Constitutive Materials
Part 3: Stiffness Characterizations
Part 4: Models for Low Temperature Cracking
Part 5: Models for Fatigue Cracking and Moisture Damage
Part 6: Models for Rutting.
CIVIL ENGINEERING

WATER WELLS AND PUMPS
by A. M Michael, S. D Khepar, Associate Director, Punjab Agricultural University, Ludhiana, and S. K Sondhi
2008 / Hardcover / 696 pages
ISBN: 9780071591201
(A Professional Reference Title)

Water Wells and Pumps is a comprehensive guide to the essential theory and design of ground water structures, wells/tube wells, and pumps, with particular emphasis on problem solving and meeting the requirements of developing nations. It features thorough, up-to-date knowledge of the science and technology of water wells and pumps as well as allied appliances and applications. This authoritative desk reference outlines the construction, operation, and maintenance of water wells for irrigation and water supply. It also presents the development and testing of tube wells as well as a variety of pumps, both location-specific.

CONTENTS
Chapter 1. Ground Water Resources Development and Utilization
Chapter 2. Hydraulics of Wells
Chapter 3. Open Wells
Chapter 4. Tube Wells and Their Design
Chapter 5. Tube Well Construction
Chapter 6. Development and Testing of Tube Wells
Chapter 7. Rehabilitation of Sick and Failed Tube Wells
Chapter 8. Man and Animal Powered Water Lifts and Positive Displacement Pumps
Chapter 9. Variable Displacement Pumps and Accessories
Chapter 10. Centrifugal Pumps: Design, Installation, Operation, Maintenance and Troubleshooting
Chapter 11. Deep Well Turbine and Submersible Pumps
Chapter 12. Propeller, Mixed Flow and Jet Pumps
Chapter 13. Application of Non-Conventional Energy Sources in Pumping
Chapter 14. Techno-Economic Evaluation of Projects on Wells and Pumps
Appendix
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EXCAVATION PLANNING, DESIGN, AND SAFETY
by Joe M. Turner
2008 (May 2008) / Hardcover / 352 pages
ISBN: 9780071498692
(A Professional Reference Title)

Excavation Systems Planning, Design, and Safety is a thorough guide to ensuring your projects are completed correctly, safely, and cost effectively. Concisely written and presented in an easy-to-navigate format, this comprehensive guide arms you with the most current information available. New developments and trends, along with numerous design examples, illustrations, and important OSHA requirements and other legal issues, provide everything you’ll need to excel in your field. Ideal for anyone involved in the trade, this indispensable reference outlines the construction, operation, and maintenance of water wells for irrigation and water supply. It also presents the development and testing of tube wells as well as a variety of pumps, both location-specific.

CONTENTS
Overview of Excavation Safety
Subsurface Installations and Outside Force Damage protection
Excavation Work Planning
Engineering Review
Understanding OSHA Excavation Safety Standards
Excavation equipment design and Use
Legal Issues
Appendix on protective systems
Glossary of terms

HYDROGEOLOGY FIELD MANUAL
Second Edition
by Willis D. Weight
2008 (December 2007) / Hardcover / 688 pages / 150 illus
ISBN: 9780071477499
(A Professional Reference Title)

The Second Edition of Hydrogeology Field Manual provides the latest information on applied applications in groundwater sampling and water-quality assessment, aquifer characterization, contamination issues, karst applications, and more. The book includes actual procedures, real-world decisions, and many examples and case studies to help you understand the occurrence and movement of groundwater in a variety of geologic settings. Filled with tips, tricks-of-the-trade, and anecdotes from seasoned field hydrogeologists, the book explains how to gain instant expertise in most field methodologies and expand your abilities for data interpretation …and other essential skills.

CONTENTS
Chapter 1: Field Hydrogeology
Chapter 2: The Geology of Hydrogeology
Chapter 3: Aquifer Properties
Chapter 4: Basic Geophysics of the Shallow Subsurface
Chapter 5: Groundwater Flow
Chapter 6: Groundwater/Surface- Water Interaction
Chapter 7: Water Chemistry Sampling and Results
Chapter 8: Drilling and Well Completion
Chapter 9: Pumping Tests
Chapter 10: Aquifer Hydraulics
Chapter 11: Slug Testing
Chapter 12: Vadose Zone
Chapter 13: Tracer Test
Chapter 14: Appendices

ROARK’S FORMULAS FOR STRESS AND STRAIN
Seventh Edition
by Warren Young, University of Wisconsin at Madison and Richard Budynas, Rochester Institute Technology
2002 / Hardcover / 832 pages
ISBN: 9780070725423
ISBN: 9780071210591 [IE]
(A Professional Reference Title)

CONTENTS
Part 1: Introduction
Chapter 1: Introduction
Part 2: Facts; Principles; Methods
Chapter 2: Stress and Strain; Important Relationships
Chapter 3: The Behavior of Bodies Under Stress
Chapter 4: Principles and Analytical Methods
Chapter 5: Numerical Methods
Chapter 6: Experimental Methods
Part 3: Formulas and Examples
Chapter 7: Tension, Compression, Shear, and Combined Stress
Chapter 8: Beams; Flexure of Straight Bars
Chapter 9: Bending of Curved Beams
Chapter 10: Torsion
Chapter 11: Flat Plates
Chapter 12: Columns and Other Compression Members
Chapter 13: Shells of Revolution; Pressure Vessels; Pipes
Chapter 14: Bodies in Contact Undergoing Direct Bearing and Shear Stress
Chapter 15: Elastic Stability

International Edition
Chapter 16: Dynamic and Temperature Stresses
Chapter 17: Stress Concentration Factors
Appendix A: Properties of a Plane Area
Appendix B: Glossary: Definitions
Appendix C: Composite Materials
Name Index
Subject Index

International Edition

TOTAL CONSTRUCTION PROJECT
MANAGEMENT
by George J. Riz
1994 / Hardcover / 432 pages / 49 illus
ISBN: 9780070529861
ISBN: 9780071136303 [IE]
(A Professional Reference Title)

CONTENTS
Construction Management Environment
Construction Contracting Process
Construction Planning
Construction Project Scheduling
Construction Project Money Plan
Construction Project Resources Planning
Construction Project Organization
Controlling the Construction Work
Project Execution
Construction Safety
Project Communications
Human Factors in Field PM
PC’s in Field PM

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# NEW TITLES

## ENGINEERING GRAPHICS/DRAWING & CAD

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FUNDAMENTALS OF GRAPHICS COMMUNICATION
Sixth Edition
by Gary Robert Bertoline, Purdue University-West Lafayette, Eric N. Wiebe, North Carolina State University—Raleigh, Nathan W. Hartman, Purdue University-West Lafayette, and William A. Ross, Purdue University-West Lafayette
2011 (January 2010) / Softcover / 800 pages
ISBN: 9780073522630
ISBN: 9780071221795 [IE]

A thoroughly contemporary approach to teaching essential engineer-
ing graphics skills has made Fundamentals of Graphics Communication the leading textbook in introductory engineering graphics courses. The sixth edition continues to integrate design concepts and the use of CAD into its outstanding coverage of the basic visualization and sketching techniques that enable students to create and communicate graphic ideas effectively.

As in past editions, the authors have included many examples of how graphics communication pertains to “real-world” engineering design, including current industry practices and breakthroughs. A website provides additional resources such as an image library, animations, and quizzes.

NEW TO THIS EDITION
- Supplemental Solid Modeling Problems have been added to the sixth edition. This is a series of new problems focusing on 3-D solid modeling for parts and assemblies. Visual examples for each part and assembly have been created with various solid modeling software packages and are included with engineering sketches to aid students in visualizing part geometry and the modeling process.
- New and revised end-of-chapter problems.
- The tear-out drawing and sketching worksheets that appeared in the back of the fifth edition are now posted on the website for easy access and printing.
- Nathan Hartman (Purdue University) and William Ross (Emeritus, Purdue University) have been added as co-authors. Both of them bring new and exciting perspectives to the text.

CONTENTS
1. Introduction to Graphics Communication
2. Sketching
3. Engineering Geometry
4. Modeling Fundamentals
5. Multiviews and Visualization
6. Auxiliary Views
7. Pictorial Projections
8. Section Views
9. Dimensioning and Tolerancing Practices
10. Geometric Dimensioning and Tolerancing (GDT)
11. Working Drawings and Assemblies
12. Design Problems
Appendices
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Index
Workbook Sheets

TECHNICAL GRAPHICS COMMUNICATIONS
Fourth Edition
by Gary Robert Bertoline, Purdue University-West Lafayette, Eric N. Wiebe, North Carolina State University—Raleigh, Nathan Hartman, Purdue University, and William Ross, Purdue University School of Engineering Tech
2009 (January 2008) / Hardcover / 1328 pages
ISBN: 9780077221300
www.mhhe.com/bertoline

In its fourth edition, Technical Graphics Communication has become a standard in the field of engineering and technical graphics. This text presents both traditional and modern approaches to technical graphics, providing engineering and technology students with a strong foundation in standard drafting practices and techniques. Strong emphasis on design and industrial applications is found throughout, reinforcing the real and practical ways that technical graphics skills are used in real companies.

CONTENTS
1-Introduction to Graphics Communications
2-The Engineering Design Process
3-Design in Industry
4-Integrated Production, Automation and Manufacturing Processes, and the Role of Technical Graphics

Part 2-Fundamental of Technical Graphics
5-Design Visualization
6-Technical Drawing Tools
7-Sketching and Text
8-Engineering Geometry and Construction
9-Three-Dimensional Modeling
10-Multiview Drawings
11-Axonometric and Oblique Drawings
12-Perspective Drawings
13-Auxiliary Views
ENGINEERING GRAPHICS/DRAWING & CAD

Part 3 - Fundamentals of Technical Graphics
14 - Fundamentals of Descriptive Geometry
15 - Intersections and Developments

Part 4 - Standard Technical Graphics Practices
16 - Section Views
17 - Dimensioning and Tolerancing Practices
18 - Geometric Dimensioning and Tolerancing Basics
19 - Fastening Devices and Methods
20 - Working Drawings
21 - Technical Data Presentation
22 - Mechanisms: Gears, Cams, Bearings, and Linkages
23 - Electronic Drawings
24 - Piping Drawings
25 - Welding Drawings

27. Electrical and Electronics Drawings
    Computer-Aided Drawing
    Review and Assignments
    Glossary
    Appendix - Standard Parts and Technical Data
    Index

ENGINEERING DRAWING
Seventh Edition
by Albert Boundy
2007 / Softcover
ISBN: 9780071284202 [IE]
www.mhhe.com/au/boundy7e

Engineering Drawing remains the leading Australian text for students of engineering drawing and graphics. This seventh edition has been updated in line with the National Engineering Curriculum, competency-based training courses, and current Australian Standards. Building on Bert Boundy’s meticulous and reliable approach to his subject, you will find: * additional material and more chapters than before * better chapter organisation * expansion of the CAD corner feature * question banks * problems * the most commonly used reference tables Presented in a step-by-step format, Engineering Drawing 7e offers maximum accessibility and convenience. This new edition will be an indispensable resource for students and a useful reference for professionals.

THE COMPLETE TECHNICAL ILLUSTRATOR
by Jon M. Duff and Greg Masson
2004 / 656 pages
ISBN: 9780072922295 (with Bind-In Card) - [Out-of-Print]
ISBN: 9780071216524 [IE]
http://highered.mcgraw-hill.com/sites/0072529962/

CONTENTS
Chapter I - Digital Reproduction of Technical Illustration:
1 Overview of Computer Graphics and Technical Illustration
2 Technical Illustration Reproduction and Workflow
Chapter II - Technical Illustration Layout and Construction:
3 Orthogonal Layout
4 Axonometric Views
5 Axonometric Circles
6 Axonometric Scale Construction
7 Axonometric Projection
8 Axonometric Shearing
9 Perspective Techniques
Chapter III - Technical Illustration Rendering:
10 Line Rendering
11 Photo Tracing
12 Emphasis with Color
13 Color Rendering
14 Postscript Materials
15 Text and Technical Illustrations
Chapter IV - Modeling, Animation, and Technical Illustration:
16 Turning Engineering Drawings into 3D Illustrations
17 Using CADD Data in Illustrations
18 Modeling for Illustration
19 Raster Materials
20 Animation and Technical Illustration
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Applying AutoCAD 2011 has been updated to accompany the new version of the AutoCAD software, which includes some useful features for both 3D modeling and 2D documentation. Some of these features include:

3D Mesh Modeling --- A 3D mesh is a new type of object that can be reshaped by pushing or pulling on its surface. The object can be converted to a 3D solid.

2D Parametric Design --- Geometric constraints between 2D objects are now available, which means it is possible to force lines to be parallel or perpendicular to one another. Dimensional constraints allow control of a dimension based on a rule or a formula.

In addition, the text reflects changes to the user interface, which has been redesigned to make some of the options more interactive and context-sensitive.

FEATURES

- End-of-Chapter Review & Activities: Review Questions allow you to check your comprehension.
- AutoCAD at Work pages help you explore the different types of careers open to people with AutoCAD knowledge and skills. Career Activities encourage you to explore the career in further detail.
- Web-Based Materials: Instructors will be given web access that includes the answers to end-of-chapter questions and problems, PowerPoint presentations, advanced projects, and other materials. Students will be able to access practice files and additional problems.

CONTENTS

Part 1: Groundwork
Chapter 1: Exploring AutoCAD
Chapter 2: User Interface
Chapter 3: Workspaces, Toolbars, and Palettes
Chapter 4: Command Entry
Chapter 5: Basic Objects
Chapter 6: Object Selection
Chapter 7: Entering Coordinates
Chapter 8: Getting Help
Chapter 9: File Maintenance
Part 2: Drawing Aids and Controls
Chapter 10: Object Snap
Chapter 11: Helpful Drawing Features
Chapter 12: Construction Aids
Chapter 13: Zooming
Chapter 14: Panning and Viewing
Part 3: Drawing and Editing
Chapter 15: Solid and Curved Objects
Chapter 16: Adding and Altering Objects
Chapter 17: Moving and Duplicating Objects
Chapter 18: Modifying and Maneuvering
Chapter 19: Hatching and Sketching
Part 4: Text and Tables
Chapter 20: Notes and Specifications
Chapter 21: Text Editing and Spell Checking
Chapter 22: Tables
Part 5: Preparing and Printing a Drawing
Chapter 23: Drawing Setups
Chapter 24: Layers and Linetypes
Chapter 25: Plotting and Printing
Chapter 26: Multiple Viewports
Part 6: Dimensioning and Tolerancing
Chapter 27: Basic Dimensioning
Chapter 28: Advanced Dimensioning
Chapter 29: Fine-Tuning Dimensions
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Chapter 31: Calculations
Part 7: Groups and Details
Chapter 32: Groups
Chapter 33: Blocks
Chapter 34: Dynamic Blocks
Chapter 35: Symbol Libraries
Chapter 36: Attributes
Chapter 37: Bills of Materials
Part 8: Drawing and Modeling
Chapter 38: Isometric Drawing
Chapter 39: The Third Dimension
Chapter 40: Drawing Objects in 3D
Chapter 41: User Coordinate Systems
Part 9: Solid Modeling
Chapter 42: Primitives
Chapter 43: Basic Modeling
Chapter 44: Boolean Operations
Chapter 45: Adjusting Solid Models
Chapter 46: Documenting Solid Models
Chapter 47: Visualization and Navigation
Chapter 48: Benefits of Solid Modeling
AUTOCAD 2010 INSTRUCTOR
Sixth Edition
by James A. Leach, University Of Louisville-Louisville

2010 (June 2009) / Softcover / 1472 pages
ISBN: 9780073375410

www.mhhe.com/leach

AutoCAD 2010 Instructor includes instruction in all the new features of AutoCAD 2010, while maintaining the pedagogy and complete coverage that have always been a hallmark of the Leach text. The text is command-oriented so chapters are centered around groups of related commands.

The full range of AutoCAD commands, concepts, and features is explained in the text. The author’s simple writing style enables students to grasp concepts easily. Fundamental concepts are discussed first, then more advanced and specialized features.

FEATURES
- Instructive Command Tables. Command tables throughout the text indicate how each command can be invoked, including icon buttons, command aliases, shortcut menus, shortcut keys, and more.
- Special “Tips”. The “TIP” indicator identifies important professional tips otherwise discovered only after much experience.
- Over 2000 figures support the concepts, commands, and procedures.
- Reference tables are included for AutoCAD commands and system variables as well as a complete index of commands.

CONTENTS
1 Getting Started
2 Working with Files
3 Draw Command Concepts
4 Selection Sets
5 Helpful Commands
6 Basic Drawing Setup
7 Object Snap and Object Snap Tracking
8 Draw Commands I
9 Modify Commands I
10 Viewing Commands
11 Layers and Object Properties
12 Advanced Drawing Setup
13 Layouts and Viewports
14 Printing and Plotting
15 Draw Commands II
16 Modify Commands II
17 Inquiry Commands
18 Creating and Editing Text
19 Internet Tools
20 Advanced Selection Sets
21 Blocks, DesignCenter, and Tool Palettes
22 Block Attributes
23 Grip Editing
24 Multiview Drawing
25 Pictorial Drawings
26 Section Views
27 Auxiliary Views
28 Dimensioning
29 Dimension Styles and Dimension Variables
30 XReferences
31 Object Linking and Embedding (OLE)
32 Raster Images And Vector Files
33 Advanced Layouts and Plotting
34 3D Modeling Basics
35 3D Display and Viewing
36 User Coordinate Systems
37 Wireframe Modeling
38 Solid Modeling Construction
39 Advanced Solids Features
40 Surface Modeling
41 Rendering [Web-only chapter]
42 Creating 2D Drawings From 3D Models [Web-only chapter]
43 Miscellaneous Commands and Features [Web-only chapter]
44 Basic Customization [Web-only chapter]
45 Menu Customization [Web-only chapter]
46 CAD Management [Web-only chapter]
47 Express Tools and Batch Plotting [Web-only chapter]
Appendix A System Variables
Appendix B Command Alias List Sorted by Command
Appendix C Command Alias List Sorted by Alias
Appendix D Buttons and Special Keys
Appendix E Command Table Index

AUTOCAD 2008 COMPANION WITH AUTOodesk 2008 INVENTOR DVD
Third Edition
by James A. Leach, University Of Louisville-Louisville, and James Dyer
2008 (August 2007) / Softcover
ISBN: 9780077228699

www.mhhe.com/leach

AutoCAD 2008 Companion is designed to teach AutoCAD 2008 in a one-semester course through its coverage of solid modeling and 2-D design and drafting essentials. AutoCAD 2008 Companion can be used on its own or as a companion to other graphics books, such as Fundamentals of Graphics Communication or Technical Graphics Communication by Bertoline and Wiebe. Its engineering, architecture, design, construction, and manufacturing examples makes this textbook suitable for a wide range of students. AutoCAD 2008 Companion is the market leader for all CAD software and is used by nearly two million students and professionals in architecture, engineering, construction, and design. This is a Complete Autocad tool, based on industry and educational needs. This text offers Autocad Inventor Software FREE with the text!

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2 Working with Files
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The text Introduction to Solid Modeling Using SolidWorks 2010 presents solid modeling not just as a communication tool, but as an essential part of the design process. To this end, the text explores design intent, the use of solid models in engineering analysis, and introduces techniques from manufacturing such as mold design and sheet metal patterning.

Howard and Musto provide a student-friendly presentation filled with easy-to-use tutorials. Their approach is also designed to help students understand how engineering is used in the real world. For instance, modeling exercises are largely centered on examples drawn from industrial applications. FREE SolidWorks software is now available to students, so students can apply exactly what they are reading!

Introduction to Solid Modeling Using SolidWorks 2010 presents “keystroke-level” tutorials, providing users new to the SolidWorks program with all the detail they need to become confident using the software. Topics are illustrated and infused with examples from the real world such as flanges, brackets, helical springs, and more. Additionally, this easy-to-use guide has modular chapters allowing for flexible organization of a course or self-study.

NEW TO THIS EDITION

- Students receive instructions for downloading the SolidWorks Student Design Kit 2010-2011, which includes a 150-day license for SolidWorks 2010 and other powerful tools and software.
- Up-to-date with the most current version of SolidWorks.
- A text website will feature tutorials, model files, lecture power points, image power points, and teaching guide. URL: mhhe.com/Howard2010

CONTENTS

PART ONE Learning SolidWorks
1. Basic Part Modeling Techniques
2. Engineering Drawings
3. Additional Part Modeling Techniques
4. Use of Parametric Modeling Techniques
5. Advanced Concepts in Part Modeling
6. Building Assembly Models from Part Models
7. Advanced Assembly Operations
8. Creating Assembly Drawings
PART TWO Applications of SolidWorks
9. Using SolidWorks for the Generation of 2-D Layouts
10. Application of SolidWorks to Vector Mechanics
11. Using SolidWorks in the Design and Analysis of Mechanisms
12. The Use of SolidWorks as a Tool for Manufacturing: Mold Design and Sheet Metal Parts
13. The Use of SolidWorks to Accelerate the Product Development Cycle
NEW

PRO ENGINEER-WILDFIRE INSTRUCTOR
Fifth Edition
by David S. Kelley, Central Michigan University
2011 (January 2010) / Softcover / 576 pages
ISBN: 9780073753559
www.mhhe.com/kelley

Fully updated for the latest version of software, Kelley's Pro/ENGINEER Wildfire 5.0 Instructor remains organized around step-by-step tutorials - the most effective way to teach and learn this procedure-intensive CAD application. Pro/ENGINEER Wildfire 5.0 Instructor provides a solid background in parametric design and constraint-based modeling. In addition, the comprehensive references make this text an all-in-one tutorial, reference, and lecture guide for students of Pro/ENGINEER.

Kelley's Pro/ENGINEER Wildfire 5.0 Instructor is fully updated for the newest version of the software and uses a very effective tutorial approach to teach this procedure-intensive application.

Chapters start by covering selected topics in moderate detail, followed by one or more tutorials covering the chapter's objectives and topics. At the end of each chapter, practice problems are used to reinforce concepts covered in the chapter and previously in the book. An accompanying website features solutions for instructors as well as ancillary materials for reading and download.

NEW TO THIS EDITION

- Text has been fully updated to include instruction in the new features of Pro/Engineer Wildfire 5.0.
- A text website will feature Commercial CD, Educational CD, Demos Tutorials, solutions manual, and image library.

CONTENTS

1. Introduction to Parametric Design
2. Pro Engineers User Interface
3. Constraint-Based Sketching
4. Extruding, Modifying, and Redefining Features
5. Feature Construction Tools
6. Revolved Features
7. Feature Manipulation Tools
8. Creating a Pro Engineer Drawing
9. Sections and Advanced Drawing Views
10. Swept and Blended Features
11. Advanced Modeling Techniques
12. Assembly Modeling
13. Surface Modeling
Appendix A Supplemental Files
Appendix B Configuration File Options

NEW

INTRODUCTION TO SOLID MODELING USING SOLIDWORKS 2009
Fifth Edition
by William E. Howard, East Carolina University, and Joseph Musto, Milwaukee School of Engineering

2010 (May 2009) / Softcover / 352 pages
ISBN: 978007375403
www.mhhe.com/howard2009

This text presents solid modeling not just as a communication tool, but as an essential part of the design process. To this end, the text explores design intent, the use of solid models in engineering analysis, and introduces techniques from manufacturing such as mold design and sheet metal patterning.

Howard and Musto provide a student-friendly presentation filled with easy to use tutorials. Their approach is also designed to help students understand how engineering is used in the real world. For instance, modeling exercises are largely centered on examples drawn from industrial applications. FREE Solid Works software is now available to students with an access card, so students can apply exactly what they are reading!

Introduction to Solid Modeling Using SolidWorks® 2009 presents "keystroke-level" tutorials, providing users new to the SolidWorks® program with all the detail they need to become confident using the software. Topics are illustrated and infused with examples from the real world such as flanges, brackets, helical springs, and more. Additionally, this easy-to-use guide has modular chapters allowing for flexible organization of a course or self-study.

CONTENTS

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5. Advanced Concepts in Part Modeling
6. Building Assembly Models from Part Models
7. Advanced Assembly Operations
8. Creating Assembly Drawings

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10. Application of SolidWorks to Vector Mechanics
11. Using SolidWorks in the Design and Analysis of Mechanisms
12. The Use of SolidWorks as a Tool for Manufacturing: Mold Design and Sheet Metal Parts
13. The Use of SolidWorks to Accelerate the Product Development Cycle

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An enormous success in its first edition, Computer Graphics, Second Edition continues to stress a hands-on programming approach within a systems context and addresses the most up-to-date computer graphics topics and issues. The text provides sufficient information to allow readers to implement, modify, and use a graphics system. Detailed algorithms describe graphics operations and combine to form a graphics system. In the second edition, raster graphics receives greater coverage, including discussion of pattern filling of transformation, antialiasing, halftones, color, and ray tracing. Other topics of current interest include Bezier curves and fractals. The book also features a revised discussion of hidden surfaces, with coverage of the most recent techniques and new examples.
## NEW TITLES

### ENGINEERING MECHANICS

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Answers to Even-Numbered Problems
NEW TO THIS EDITION

- Thoroughly Refreshed Problem Set in the Ninth Edition. 40% of the problems are updated from the previous edition.
- Online Homework specific to the text is provided. Many problems are algorithmically-generated giving the instructor a wide array of problems for assignment to students.

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Dynamics - Scalar

**MECHANICS FOR ENGINEERS: DYNAMICS**

*Fifth Edition*

by Ferdinand P. Beer (deceased), and E. Russell Johnston, Jr.
University of Connecticut

2008 (November 2007) / Hardcover / 512 pages
ISBN: 9780072464771
ISBN: 9780071275361 (SI units)

The first book published in the Beer and Johnston Series, Mechanics for Engineers: Dynamics is a scalar-based introductory dynamics text, ideally suited for engineering technology programs, providing first-rate treatment of rigid bodies without vector mechanics. This new edition provides an extensive selection of new problems and end-of-chapter summaries. The text brings the careful presentation of content, unmatched levels of accuracy, and attention to detail that have made Beer and Johnston texts the standard for excellence in engineering mechanics education.

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**FEATURES**

- 5-Part Problem Solving Methodology used in all example problems. A consistent problem-solving approach is used throughout. Each example problem is solved using a “template” that helps students effectively set up the problem and solve it correctly.
- Introduces Appropriate Use of Computational Tools. Fundamental concepts are taught thoroughly, and the use of computational tools is taught when appropriate.
- Appropriate Design Coverage. The authors have brought engineering design considerations into selected problems where applicable. This sensitizes students to the fact that engineering problems do not have a single answer and many different routes lead to a correct solution.
- Real World Examples, Problems, Applications, Photographs. All the photographs, applications, examples are from the real world, so that students will be able to identify circumstances that they encounter in their daily lives.
- Online Homework features selected problems from the text and algorithmically-generated problems that give the instructor a wide array of homework assignment options.
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**NEW**

**VECTOR MECHANICS FOR ENGINEERS: DYNAMICS**

* Ninth Edition *

*by Ferdinand P. Beer (deceased), E. Russell Johnston, Jr., University of Connecticut, William E. Clausen, Ohio State University, and Phillip J. Cornwell, Rose-Hulman Institute of Technology*

2010 (January 2009) / Hardcover
ISBN: 9780071295493

www.mhhe.com/beerjohnston

Continuing in the spirit of its successful previous editions, the ninth edition of Beer, Johnston, Mazurek, and Cornwell's Vector Mechanics for Engineers provides conceptually accurate and thorough coverage together with a significant refreshment of the exercise sets and online delivery of homework problems to your students. Nearly forty percent of the problems in the text are changed from the previous edition.

The Beer/Johnston textbooks introduced significant pedagogical innovations into engineering mechanics teaching. The consistent, accurate problem-solving methodology gives your students the best opportunity to learn statics and dynamics. At the same time, the careful presentation of content, unmatched levels of accuracy, and attention to detail have made these texts the standard for excellence.

**NEW TO THIS EDITION**

- Thoroughly Refreshed Problem Set in the Ninth Edition. 40% of the problems are updated from the previous edition.
- Online Homework specific to the text is provided. Many problems are algorithmically-generated giving the instructor a wide array of problems for assignment to students.

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**Appendix A Some Useful Definitions and Properties of Vector Algebra**

**Appendix B Moments of Inertia of Vector Algebra**

**Appendix C Fundamentals of Engineering Examination**

**International Edition**

**VECTOR MECHANICS FOR ENGINEERS: DYNAMICS**

* Eighth Edition *

*by Marcelo R M Crespo da Silva, Rensselaer Polytech Institute—Troy*

2007 / Hardcover
http://highered.mheducation.com/sites/007065994x/information_center_view0

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**Appendix A: Some Useful Definitions and Properties of Vector Algebra**

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**Appendix C: Fundamentals of Engineering Examination**

**INTERNATIONAL DYNAMICS**

*by Marco M Crespo da Silva, Rensselaer Polytech Institute—Troy*

2004 / 672 pages
ISBN: 9780072921885 (with CD) - (Out-of-Print)
ISBN: 9780071232364 [IE]

http://highered.mheducation.com/sites/0072921889/

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6) Introduction to dynamics of rigid bodies in general motion
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8) Vibrations & oscillations of dynamical systems
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**Appendix B: Notes on sequential rotations, angular velocity, and acceleration**
**Appendix C: Properties of the inertia matrix of a body**
**Appendix D: Suggested computer lab assignments**
**Appendix F: Answers to selected problems**
**Appendix G: Some references for advanced studies**
SCHAUM'S OUTLINE OF ENGINEERING MECHANICS
Fifth Edition
by William McLean, Lafayette College; E. W. Nelson
1998 / 480 pages
ISBN: 9780070461932
(A Schaum’s Publication)

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Chapter 3: Resultants of Coplanar Force Systems
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Chapter 10: First Moments and Centroids
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Chapter 14: Kinematics of a Rigid Body in Plane Motion

Block diagrams, formerly in Chapter 5, are now presented in
Chapter 9 to be closer to their applications in control system analysis.
The material in Chapter 5 dealing with transfer functions and state
variable methods has been reorganized to better delineate the ad-
vantages of each method.

Introduction to MATLAB®, offered on the text website, provides
readers with a practical, concise guide to the program.

The former Chapter 11 has been split into two chapters to focus
more concisely on PID control system design issues (new Chapter
11) and compensator design (new Chapter 12).

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Numerical Methods (on the website)
Fourier Series.
Statics and Dynamics

NEW

ENGINEERING MECHANICS: STATICS AND DYNAMICS
by Michael Plesha, University of Wisconsin --- Madison, Gary Gray
Penn State Univ-Univ Park, and Francesco Costanzo, Penn State Univ-Univ Park

2010 (March 2009) / Hardcover / 1376 pages
ISBN: 9780077302009
http://www.mhhe.com/pge

Plesha, Gray, and Costanzo’s Engineering Mechanics: Statics & Dynamics presents the fundamental concepts clearly, in a modern context using applications and pedagogical devices that connect with today’s students. The text features a five-part problem-solving methodology that is consistently used throughout all example problems. This methodology helps students lay out the steps necessary to correct problem-formulation and explains the steps needed to arrive at correct and realistic solutions. Once students have fully mastered the basic concepts, they are taught appropriate use of modern computational tools where applicable. Further reinforcing the text’s modern emphasis, the authors have brought engineering design considerations into selected problems where appropriate. This sensitizes students to the fact that engineering problems do not have a single answer and many different routes lead to a correct solution.

The first new mainstream text in engineering mechanics in nearly twenty years, Plesha, Gray, and Costanzo’s Engineering Mechanics: Statics and Dynamics will help your students learn this important material efficiently and effectively.

FEATURES

- 5-Part Problem Solving Methodology used in all example problems. A consistent problem-solving approach is used throughout. Each example problem is solved using a “template” that helps students effectively set up the problem and solve it correctly.
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Appendix B Differential Equations and Mathematical Software
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Appendix D Rotation Matrices and Angular Velocities
Appendix E Moments and Products of Inertia

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Continuing in the spirit of its successful previous editions, the ninth edition of Beer, Johnston, Mazurek, and Cornwell’s Vector Mechanics for Engineers provides conceptually accurate and thorough coverage together with a significant refreshment of the exercise sets and online delivery of homework problems to your students. Nearly forty percent of the problems in the text are changed from the previous edition. The Beer/Johnston textbooks introduced significant pedagogical innovations into engineering mechanics teaching. The consistent, accurate problem-solving methodology gives your students the best opportunity to learn statics and dynamics. At the same time, the careful presentation of content, unmatched levels of accuracy, and attention to detail have made these texts the standard for excellence.

NEW TO THIS EDITION

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FEATURES

- In SI Units  
- Follows the Vector Approach  
- Excellent span of coverage: 100% syllabi coverage.  
- Excellent depth of coverage: Detailed explanations supported with apt diagrammatic representations in a very organized manner render good understanding of the subject.  
- Diagrams: Illustrious 3D diagrams help in clear understanding of the topics  

Pedagogy:

- Solved Examples: 450  
- Practice problems : 560  
- Objective type Questions: 140  

A total of 1150 problems present in the book
Numerical Methods

International Edition

NUMERICAL METHODS FOR ENGINEERS
Sixth Edition
by Steven C. Chapra, Tufts University, and Raymond P. Canale,
Emeritus University of Michigan

2010 (April 2009) / Hardcover / 960 pages
ISBN: 9780073401065
ISBN: 9780071267595 [IE]
www.mhhe.com/chapra

Instructors love Numerical Methods for Engineers because it makes teaching easy! Students love it because it is written for them—with clear explanations and examples throughout. The text features a broad array of applications that span all engineering disciplines. The sixth edition retains the successful instructional techniques of earlier editions. Chapra and Canale’s unique approach opens each part of the text with sections called Motivation, Mathematical Background, and Orientation. This prepares the student for upcoming problems in a motivating and engaging manner. Each part closes with an Epilogue containing Trade-Offs, Important Relationships and Formulas, and Advanced Methods and Additional References. Much more than a summary, the Epilogue deepens understanding of what has been learned and provides a peek into more advanced methods.

Approximately 20% of the problems are new or revised in this edition. The expanded breadth of engineering disciplines covered is especially evident in the problems, which now cover such areas as biotechnology and biomedical engineering.

Users will find use of software packages, specifically MATLAB®, Excel® with VBA and Mathcad®. This includes material on developing MATLAB® m-files and VBA macros.

NEW TO THIS EDITION

- Approximately 20% of the problems are new or revised for this edition.

FEATURES

- Challenging problems drawn from all engineering disciplines are included in the text.
- Chapra is known for his clear explanations and elegantly rendered examples.
- Users will have access to a book specific website which will house Instructor’s Solutions Manual, PowerPoint slides of all text figures, M-Files, general textbook information and more!

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Steven Chapra’s second edition, Applied Numerical Methods with MATLAB for Engineers and Scientists, is written for engineers and scientists who want to learn numerical problem solving. This text focuses on problem-solving (applications) rather than theory, using MATLAB, and is intended for Numerical Methods users; hence theory is included only to inform key concepts. The second edition feature new material such as Numerical Differentiation and ODE’s: Boundary-Value Problems.

For those who require a more theoretical approach, see Chapra’s best-selling Numerical Methods for Engineers, 5/e (2006), also by McGraw-Hill.

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Fourth Edition
by William Nash, University of Massachusetts
1998 / 432 pages
ISBN: 9780070466173
(A Schaum's Publication)

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SCHAUM'S OUTLINE OF STATICS AND STRENGTH OF MATERIALS
by John Jackson, Vermont Technical College; Harold Wirtz, Vermont Technical College
1983 / 416 pages
ISBN: 9780070321212
(A Schaum's Publication)

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International Edition

FUNDAMENTALS OF VIBRATIONS
by Leonard Meirovitch, Virginia Polytechnic Institute
2001 / 816 pages / Hardcover
ISBN: 9780071181747 [IE]
www.mhhe.com/engcs/mech/meirovitch

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SCHAUM'S OUTLINE OF MECHANICAL VIBRATIONS
by S. Graham Kelly, University of Akron
1996 / 336 pages
ISBN: 9780070340411
(A Schaum's Publication)

Elasticity/Plasticity

International Edition

THEORY OF ELASTICITY
Third Edition
by Stephen Timoshenko, deceased; J. N. Goodier, deceased
1970 / 608 pages
ISBN: 9780070858053 [IE]

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Plates & Shells

International Edition

THEORY OF PLATES AND SHELLS
Second Edition
by Stephen Timoshenko, deceased; Krieger Woinowsky, Stanford University
1959 / 580 pages
ISBN: 9780070858206 [IE]

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International Edition

ROARK’S FORMULAS FOR STRESS AND STRAIN
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by Warren Young, University of Wisconsin at Madison and Richard Budynas, Rochester Institute Technology
2002 / 832 pages
ISBN: 9780070725423
ISBN: 9780071210591 [IE]
(A Professional Reference Title)

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Engineering Design

Dieter’s Engineering Design 4/e represents a major update of this classic textbook for senior design courses. As in previous editions, Engineering Design provides a broader overview of topics than most design texts and contains much more prescriptive guidance on how to carry out design. Dieter focuses on material selection as well as how to implement the design process. Engineering Design provides the senior mechanical engineering students with a realistic understanding of the design process. It is written from the viewpoint that design is the central activity of the engineering profession, and it is more concerned with developing attitudes and approaches than in presenting design techniques and tools.

CONTENTS
Chapter 1: The Engineering Design Process
Chapter 2: The Product Development Process
Chapter 3: Problem Definition and Need Identification
Chapter 4: Team Behavior and Tools
Chapter 5: Gathering Information
Chapter 6: Concept Generation
Chapter 7: Concept Selection and Decision Making
Chapter 8: Embodiment Design
Chapter 9: Detail Design
Chapter 10: Modeling and Simulation
Chapter 11: Materials Selection and Materials Engineering
Chapter 12: Design for Manufacturing
Chapter 13: Risk, Reliability, and Safety
Chapter 14: Robust and Quality Design
Chapter 15: Economic Decision Making
Chapter 16: Cost Evaluation
Chapter 17: Legal and Ethical Issues in Engineering Design
Appendices

DESIGN FOR ELECTRICAL AND COMPUTER ENGINEERS
by Ralph Ford, Penn State Erie Behrend College, and Chris Coulston, Penn State Erie Behrend College
2008 (August 2007) / Softcover / 336 pages
ISBN: 9780073380353
ISBN: 9780071263474 [IE]
http://highered.mcgraw-hill.com/sites/0073380350

This book is written for students and teachers engaged in electrical and computer engineering (ECE) design projects, primarily in the senior year. It guides students and faculty through the steps necessary for the successful execution of design projects. The objective of the text is to provide a treatment of the design process in ECE with a sound academic basis that is integrated with practical application. It has a strong guiding vision -- that a solid understanding of the Design Process, Design Tools, and the right mix of Professional Skills are critical for project and career success. This text is unique in providing a comprehensive design treatment for ECE.

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Part I – The Engineering Design Process
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Chapter 2: Project Selection and Needs Identification
Chapter 3: The Requirements Specification
Chapter 4: Concept Generation and Evaluation

Part II – Design Tools
Chapter 5: System Design I: Functional Decomposition
Chapter 6: System Design II: Behavior Models
Chapter 7: Testing
Chapter 8: System Reliability

Part III – Professional Skills
Chapter 9: Teams and Teamwork
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GENERAL ENGINEERING

I-DEAS STUDENT GUIDE
Second Edition
by Structural Dynamics Research Corporation
2004 / 480 pages
ISBN: 9780072525441 (Out-of-Print)
ISBN: 9780071216326 [IE]

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Preface: How to Use This Guide
1 Introduction to I-DEAS
2 Part Modeling
3 Modifying Parts
4 Constraints and Constrain Networks
5 Surfacing Techniques
6 Assemblies and Mechanisms
7 Annotation and Drafting
8 Manufacturing
9 Simulation
10 Other I-DEAS Applications. Sheet Metal, Harness, Mold Design, Test
11 Best Practices
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INTRODUCTION TO ENGINEERING AND
THE ENVIRONMENT
by Edward S Rubin and Cliff Davidson, both of the Carnegie Mellon University
2001 / 576 pages
ISBN: 9780072354676
ISBN: 9780071181853 [IE]
http://mhhe.com/engcs/civil/rubin

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I: Motivation and Framework
1 Engineering and the Environment
2 Overview of Environmental Issues
II: Case Studies in Design for the Environment
3 Automobiles and the Environment
4 Batteries and the Environment
5 Power Plants and the Environment
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7 Environmental Life Cycle Assessments
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8 Controlling Urban Smog
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10 Global Warming and Climate Change
11 Toxic Metals in the Environment
12 PCBs in the Aquatic Environment
IV: Topics in Engineering and Environmental Policy
13 Engineering Economics
Appendix A: Selected Topics from Algebra
Appendix B: Trigonometry
Appendix C: Graphics
Appendix D: General
Appendix E: Plane Surfaces

Introduction/Problem Solving

ENGINEERING FUNDAMENTALS AND
PROBLEM SOLVING
Fifth Edition
by Arvid R. Eide, Iowa State University, Roland Jenison, Iowa State University, Larry L. Northup, Iowa State University, and Steven Mickelson, Iowa State University
2008 (January 2007) / Hardcover / 480 pages
ISBN: 9780073191584
ISBN: 9780071278751 [IE]

www.mhhe.com/best

The fifth edition of Engineering Fundamentals & Problem Solving is written to motivate engineering students during their first year. Students will develop the skills in solving open-ended problems, this text will provide students with experience in solving problems in SI and customary units while presenting solutions in a logical manner. Eide introduces students to subject areas that are common to engineering disciplines that require the application of fundamental engineering concepts.

For those instructors who desire a shorter text to complement other application specific texts, McGraw-Hill offers cutomization through our Primis-Build a Book, or the BEST version of this text. Please see Eide’s Introduction to Engineering Design and Problem Solving, 2nd edition, from the BEST series. Getting familiar to what engineering is and what you need to be a successful engineer.

CONTENTS
1 The Engineering Profession
2 Engineering Design--A Process
3 Engineering Solutions
4 Representation of Technical Information
5 Engineering Estimations and Approximations
6 Dimensions, Units, and Conversions
7 Preparation for Computer Solutions
8 Statistics
9 Mechanics
10 Material Balance
11 Electrical Theory
12 Energy
13 Engineering Economics
Appendix A: Selected Topics from Algebra
Appendix B: Trigonometry
Appendix C: Graphics
Appendix D: General
Appendix E: Plane Surfaces
CONCEPTS IN ENGINEERING
Second Edition
by Mark T. Holtzapple, Texas A & M University, and W. Dan Reece, Texas A & M University
2008 (January 2007) / Softcover / 304 pages
ISBN: 9780073191621

The second edition of Holtzapple and Reece's widely popular text, Concepts in Engineering, introduces fundamental engineering concepts to freshman engineering students. Its central focus is to positively motivate students for the rest of their engineering education, as well as their future engineering. Due to the book's concise, yet comprehensive coverage, it can be used in a wide variety of introductory courses. Text is for students who are not sure if they want to be engineers and the book almost acts as a "hook". Holtzapple's approach is different than Eide's text which expects students to go into engineering.

CONTENTS
1. Preparing to Be an Engineer
2. The Engineer
3. Engineering Ethics
4. Problem Solving
5. Introduction to Design
6. Engineering Communications
7. Numbers
8. Tables and Graphs
9. SI System of Units
10. Unit Conversions
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Topic Index
Biographical Index

INTERNATIONAL EDITION

APPLIED NUMERICAL METHODS WITH MATLAB FOR ENGINEERS AND SCIENTISTS
Second Edition
by Steven C. Chapra, Tufts University
2008 (November 2006) / Hardcover / 608 pages
ISBN: 9780073132907
ISBN: 9780071259217 [IE]

Steven Chapra’s second edition, Applied Numerical Methods with MATLAB for Engineers and Scientists, is written for engineers and scientists who want to learn numerical problem solving. This text focuses on problem-solving (applications) rather than theory, using MATLAB, and is intended for Numerical Methods users; hence theory is included only to inform key concepts. The second edition feature new material such as Numerical Differentiation and ODE’s: Boundary-Value Problems. For those who require a more theoretical approach, see Chapra’s best-selling Numerical Methods for Engineers, 5/e (2006), also by McGraw-Hill.

CONTENTS
Part One Modeling, Computers, and Error Analysis.
2. MATLAB Fundamentals.
3. Programming with MATLAB.
4. Roundoff and Truncation Errors.
Part Two Roots and Optimization.
5. Roots: Bracketing Methods.
7. Optimization.
Part Three Linear Systems.
8. Linear Algebraic Equations and Matrices.
10. LU Factorization.
11. Matrix Inverse and Condition.
12. Iterative Methods.
Part Four Curve Fitting.
13. Linear Regression.
14. General Linear Least-Squares and Non-Linear Regression.
17. Numerical Integration Formulas.
18. Numerical Integration of Functions.
Part Six Ordinary Differential Equations.
20. Initial-Value Problems.
22. Boundary-Value Problems
Appendix A: Eigenvalues
Appendix B: MATLAB Built-in Functions
Appendix C: MATLAB M-File Functions
Bibliography
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FOUNDATIONS OF ENGINEERING
Second Edition
by Mark T Holtzapple and W Dan Reece, both of Texas A&M University, College station
2003 / 720 pages
ISBN: 9780072480825
ISBN: 9780071195614 [IE]

www.mhhe.com/chapra

Section I - Introduction to Engineering:
1 The Engineer
2 Engineering Ethics
3 Problem Solving
4 Understanding and Using Computers
5 Introduction to Design
6 Engineering Communications
Section II - Mathematics:
7 Numbers
8 Tables and Graphs
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Appendix D: Summary of Some Engineering Milestones

GENERAL ENGINEERING
NEW FUNDAMENTALS OF GRAPHICS COMMUNICATION
Sixth Edition
by Gary Robert Bertoline, Purdue University-West Lafayette, Eric N. Wiebe, North Carolina State University—Raleigh, Nathan W. Hartman, Purdue University-West Lafayette, and William A. Ross, Purdue University-West Lafayette
2011 (January 2010) / Softcover / 800 pages
ISBN: 9780073522630
www.mcgraw-hill.com/bertoline

A thoroughly contemporary approach to teaching essential engineering graphics skills has made Fundamentals of Graphics Communication the leading textbook in introductory engineering graphics courses. The sixth edition continues to integrate design concepts and the use of CAD into its outstanding coverage of the basic visualization and sketching techniques that enable students to create and communicate graphic ideas effectively.

As in past editions, the authors have included many examples of how graphics communication pertains to "real-world" engineering design, including current industry practices and breakthroughs. A website provides additional resources such as an image library, animations, and quizzes.

NEW TO THIS EDITION

- Supplemental Solid Modeling Problems have been added to the sixth edition. This is a series of new problems focusing on 3-D solid modeling for parts and assemblies. Visual examples for each part and assembly have been created with various solid modeling software packages and are included with engineering sketches to aid students in visualizing part geometry and the modeling process.
- New and revised end-of-chapter problems.
- The tear-out drawing and sketching worksheets that appeared in the back of the fifth edition are now posted on the website for easy access and printing.
- Nathan Hartman (Purdue University) and William Ross (Emeritus, Purdue University) have been added as co-authors. Both of them bring new and exciting perspectives to the text.

CONTENTS
1. Introduction to Graphics Communication
2. Sketching
3. Engineering Geometry
4. Modeling Fundamentals
5. Multiviews and Visualization
6. Auxiliary Views
7. Pictorial Projections
8. Section Views
9. Dimensioning and Tolerancing Practices
10. Geometric Dimensioning and Tolerancing (GDT)
11. Working Drawings and Assemblies
12. Design Problems
Appendices
Glossary

INTRODUCTION TO GRAPHICS COMMUNICATIONS FOR ENGINEERS
B.E.S.T SERIES
Fourth Edition
by Gary Robert Bertoline, Purdue University-West Lafayette
2009 (April 2008) / Softcover / 320 pages
ISBN: 978-0-07-352264-7
www.mcgraw-hill.com/bertoline

Bertoline’s texts are the leading books in the engineering and technical graphics fields. Introduction to Graphics Communication for Engineers presents both traditional and modern approaches to engineering graphics, providing engineering and technology students a strong foundation in graphics methods through visualization, drawing, drafting, CAD software, and 3-D modeling. A strong emphasis on design in industry is found throughout, reinforcing the real and practical ways that technical graphics skills are used by engineers.

Introduction to Graphics Communications for Engineers is part of McGraw-Hill’s B.E.S.T. series that introduces students to standard practices and tools used by engineers and engineering students.

CONTENTS
1. Introduction to Graphics Communications
2. Sketching and Text
3. Section and Auxiliary Views
4. Dimensioning and Tolerancing Practices
5. Reading and Constructing Working Drawings
6. Design and 3-D Modeling

TECHNICAL GRAPHICS COMMUNICATIONS
Fourth Edition
by Gary Robert Bertoline, Purdue Univ-West Lafayette, Eric N. Wiebe, North Carolina State University-Raleigh, Nathan Hartman, Purdue University, and William Ross, Purdue University School of Engineering Tech
2009 (January 2008) / Hardcover / 1328 pages
ISBN: 9780077221300
www.mcgraw-hill.com/bertoline

In its fourth edition, Technical Graphics Communication has become a standard in the field of engineering and technical graphics. This text presents both traditional and modern approaches to technical graphics, providing engineering and technology students with a strong foundation in standard drafting practices and techniques. Strong emphasis on design and industrial applications is found throughout, reinforcing the real and practical ways that technical graphics skills are used in real companies.

CONTENTS
1-Introduction to Graphics Communications
2-The Engineering Design Process
3-Design in Industry
4-Integrated Production, Automation and Manufacturing Processes, and the Role of Technical Graphics
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7-Sketching and Text
8-Engineering Geometry and Construction
9-Three-Dimensional Modeling
10-Multiview Drawings
11-Axonometric and Oblique Drawings
12-Perspective Drawings
13-Auxiliary Views
Part 3-Fundamentals of Technical Graphics
14-Fundamentals of Descriptive Geometry
15-Intersections and Developments
Part 4-Standard Technical Graphics Practices
16-Section Views
17-Dimensioning and Tolerancing Practices
18-Geometric Dimensioning and Tolerancing Basics
19-Fastening Devices and Methods
20-Working Drawings
21-Technical Data Presentation
22-Mechanisms: Gears, Cams, Bearings, and Linkages
23-Electronic Drawings
24-Piping Drawings
25-Welding Drawings

Part IV: Power Transmissions
20. Belts, Chains, and Gears
21. Coupling, Bearings, and Seals
22. Cams, Linkages, and Actuators

Part V: Special Fields of Drafting
23. Developments and Intersections
24. Pipe Drawings
25. Structural Drafting
26. Jigs and Fixtures
27. Electrical and Electronics Drawings

Computer-Aided Drawing
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ENGINEERING DRAWING
Seventh Edition
by Albert Boundy
2007 / Softcover
ISBN: 9780070138186 (with Sketchbook)
(McGraw-Hill Australia Title)

www.mhhe.com/au/boundy7e

Engineering Drawing remains the leading Australian text for students of engineering drawing and graphics. This seventh edition has been updated in line with the National Engineering Curriculum, competency-based training courses, and current Australian Standards. Building on Bert Boundy’s meticulous and reliable approach to his subject, you will find: * additional material and more chapters than before * better chapter organisation * expansion of the CAD corner feature * question banks * problems * the most commonly used reference tables Presented in a step-by-step format, Engineering Drawing 7e offers maximum accessibility and convenience. This new edition will be an indispensable resource for students and a useful reference for professionals.
Introduction to MATLAB for Engineers is a simple, concise book designed to be useful for beginners and to be kept as a reference. MATLAB is a globally available standard computational tool for engineers and scientists. The terminology, syntax, and the use of the programming language are well defined, and the organization of the material makes it easy to locate information and navigate through the textbook. The text covers all the major capabilities of MATLAB that are useful for beginning students.

- A new Chapter 11 covering the MuPad Notebook Interface. This interface makes it easier to access functions with a symbol palette, with the equations displayed in typeset math. Graphics, animations, and descriptive text can be included to prepare a report.
- Advanced programming, function discovery, and regression are now covered in two chapters to allow for flexible coverage.
- A text website will feature instructor's solutions manual and power points. Text URL is: mhhe.com/palm

PART 1: COMPUTATIONAL TOOLS
Chapter 1: Computing Tools
Chapter 2: Excel Fundamentals
Chapter 3: MATLAB Fundamentals
Chapter 4: MATLAB Programming
Chapter 5: Plotting Data

PART 2: ENGINEERING APPLICATIONS
Chapter 6: Finding the Roots of Equations
Chapter 7: Matrix Mathematics
Chapter 8: Solving Simultaneous Equations
Chapter 9: Numerical Integration
Chapter 10: Optimization
INTRODUCTION TO MATLAB 7 FOR ENGINEERS
Second Edition
by William Palm, University of Rhode Island—Kingston
2005 / 752 pages
ISBN: 9780072922424 (with Bind-In Card)
ISBN: 9780071232623 [IE]

www.mhhe.com/palm

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1 An Overview of MATLAB
2 Numeric, Cell, and Structure Arrays
3 Functions and Files
4 Programming with MATLAB
5 Advanced Plotting and Model Building
6 Linear Algebraic Equations
7 Probability, Statistics, and Interpolation
8 Numerical Calculus and Differential Equations
9 Simulink
10 Symbolic Processing with MATLAB
Appendix A: Guide to Commands and Functions in this Text
Appendix B: Animation and Sound in MATLAB
Appendix C: Formatted Output in MATLAB
Appendix D: References
Appendix E: Some Project Suggestions (Online)
Answers to Selected Problems

APPLYING AUTOCAD 2011
Second Edition
by Terry Wohlers
2011 (June 2010) / Softcover / 832 pages
ISBN: 9780073375489

www.mhhe.com/wohlers

Applying AutoCAD 2011 has been updated to accompany the new version of the AutoCAD software, which includes some useful features for both 3D modeling and 2D documentation. Some of these features include:

3D Mesh Modeling --- A 3D mesh is a new type of object that can be reshaped by pushing or pulling on its surface. The object can be converted to a 3D solid.

2D Parametric Design --- Geometric constraints between 2D objects are now available, which means it is possible to force lines to be parallel or perpendicular to one another. Dimensional constraints allow control of a dimension based on a rule or a formula.

In addition, the text reflects changes to the user interface, which has been redesigned to make some of the options more interactive and context-sensitive.
NEW

AUTOCAD 2010 INSTRUCTOR
Sixth Edition
by James A. Leach, University Of Louisville-Louisville

2010 (June 2009) / Softcover / 1472 pages
ISBN: 9780073375410

www.mhhe.com/leach

AutoCAD 2010 Instructor includes instruction in all the new features of AutoCAD 2010, while maintaining the pedagogy and complete coverage that have always been a hallmark of the Leach text. The text is command-oriented so chapters are centered around groups of related commands.

The full range of AutoCAD commands, concepts, and features is explained in the text. The author's simple writing style enables students to grasp concepts easily. Fundamental concepts are discussed first, then more advanced and specialized features.

FEATURES

- Instructive Command Tables. Command tables throughout the text indicate how each command can be invoked, including icon buttons, command aliases, shortcut menus, shortcut keys, and more.
- Special "Tips". The "TIP" indicator identifies important professional tips otherwise discovered only after much experience.
- Over 2000 figures support the concepts, commands, and procedures.
- Reference tables are included for AutoCAD commands and system variables as well as a complete index of commands.

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2 Working with Files
3 Draw Command Concepts
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5 Helpful Commands
6 Basic Drawing Setup
7 Object Snap and Object Snap Tracking
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28 Dimensioning
29 Dimension Styles and Dimension Variables
30 XReferences
31 Object Linking and Embedding (OLE)
32 Raster Images And Vector Files
33 Advanced Layouts and Plotting
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38 Solid Modeling Construction
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Appendix E Command Table Index

AUTOCAD 2008 COMPANION WITH AUTODESK 2008 INVENTOR DVD
Third Edition
by James A. Leach, University Of Louisville-Louisville, and James Dyer
2008 (August 2007) / Softcover
ISBN: 9780077228699

www.mhhe.com/leach

AutoCAD 2008 Companion is designed to teach AutoCAD 2008 in a one-semester course through its coverage of solid modeling and 2-D design and drafting essentials. AutoCAD 2008 Companion can be used on its own or as a companion to other graphics books, such as Fundamentals of Graphics Communication or Technical Graphics Communication by Bertoline and Wiebe. Its engineering, architecture, design, construction, and manufacturing examples makes this textbook suitable for a wide range of students. AutoCAD 2008 Companion is the market leader for all CAD software and is used by nearly two million students and professionals in architecture, engineering, construction, and design. This is a Complete Autocad tool, based on industry and educational needs. This text offers Autocad Inventor Software FREE with the text!

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INTRODUCTION TO SOLID MODELING USING SOLIDWORKS 2010
Sixth Edition
by William E. Howard, East Carolina University, and Joseph Musto, Milwaukee School of Engineering
2011 (June 2010) / Softcover / 384 pages
ISBN: 9780073375434

The text Introduction to Solid Modeling Using SolidWorks 2010 presents solid modeling not just as a communication tool, but as an essential part of the design process. To this end, the text explores design intent, the use of solid models in engineering analysis, and introduces techniques from manufacturing such as mold design and sheet metal patterning.

Howard and Musto provide a student-friendly presentation filled with easy-to-use tutorials. Their approach is also designed to help students understand how engineering is used in the real world. For instance, modeling exercises are largely centered on examples drawn from industrial applications. FREE SolidWorks software is now available to students, so students can apply exactly what they are reading!

Introduction to Solid Modeling Using SolidWorks 2010 presents "keystroke-level" tutorials, providing users new to the SolidWorks program with all the detail they need to become confident using the software. Topics are illustrated and infused with examples from the real world such as flanges, brackets, helical springs, and more. Additionally, this easy-to-use guide has modular chapters allowing for flexible organization of a course or self-study.

NEW TO THIS EDITION

- Students receive instructions for downloading the SolidWorks Student Design Kit 2010-2011, which includes a 150-day license for SolidWorks 2010 and other powerful tools and software.
- Up-to-date with the most current version of SolidWorks.
- A text website will feature tutorials, model files, lecture power points, image power points, and teaching guide. URL: mhhe.com/howard2010

PRO ENGINEER-WILDFIRE INSTRUCTOR
Fifth Edition
by David S. Kelley, Central Michigan University
2011 (January 2010) / Softcover / 576 pages
ISBN: 9780073375359

Fully updated for the latest version of software, Kelley's Pro/ENGINEER Wildfire 5.0 Instructor remains organized around step-by-step tutorials - the most effective way to teach and learn this procedure-intensive CAD application. Pro/ENGINEER Wildfire 5.0 Instructor provides a solid background in parametric design and constraint-based modeling. In addition, the comprehensive references make this text an all-in-one tutorial, reference, and lecture guide for students of Pro/ENGINEER.

Kelley's Pro/ENGINEER Wildfire 5.0 Instructor is fully updated for the newest version of the software and uses a very effective tutorial approach to teach this procedure-intensive application.

Chapters start by covering selected topics in moderate detail, followed by one or more tutorials covering the chapter's objectives and topics. At the end of each chapter, practice problems are used to reinforce concepts covered in the chapter and previously in the book. An accompanying website features solutions for instructors as well as ancillary materials for reading and download.

NEW TO THIS EDITION

- Text has been fully updated to include instruction in the new features of Pro/Engineer Wildfire 5.0.
- A text website will feature Commercial CD, Educational CD, Demos Tutorials, solutions manual, and image library.

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2 Pro Engineers User Interface
3 Constraint-Based Sketching
4 Extruding, Modifying, and Redefining Features
5 Feature Construction Tools
6 Revolved Features
7 Feature Manipulation Tools
8 Creating a Pro Engineer Drawing
9 Sections and Advanced Drawing Views
10 Swept and Blended Features
Introduction to MATLAB for Engineers is a simple, concise book designed to be useful for beginners and to be kept as a reference. MATLAB is a globally available standard computational tool for engineers and scientists. The terminology, syntax, and the use of the programming language are well defined, and the organization of the material makes it easy to locate information and navigate through the textbook. The text covers all the major capabilities of MATLAB that are useful for beginning students.

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- Advanced programming, function discovery, and regression are now covered in two chapters to allow for flexible coverage.
- A text website will feature instructor’s solutions manual and power points. Text URL is: mhhe.com/palm

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CHAPTER 2. Numeric, Cell, and Structure Arrays
CHAPTER 3. Functions and Files
CHAPTER 4. Decision-Making Programs
CHAPTER 5. Advanced Plotting
CHAPTER 6. Model Building and Regression
CHAPTER 7. Linear Algebraic Equations
CHAPTER 8. Probability, Statistics, and Interpolation
CHAPTER 10. Simulink
CHAPTER 11. MuPAD
APPENDIX A. Guide to Commands and Functions In This Text
APPENDIX B. Animation and Sound in MATLAB
APPENDIX C. Formatted Output in MATLAB
APPENDIX D. References
Answers to Selected problems

C for Engineers and Scientists is a complete and authoritative introduction to computer programming in C, with introductions to object-oriented programming in C++, and graphical plotting and numerical computing in C/C++ interpreter Ch® and MATLAB® for applications in engineering and science. This book is designed to teach students how to solve engineering and science problems using C. It teaches beginners with no previous programming experience the underlying working principles of scientific computing and a disciplined approach for software development. All the major features of C99 and C99 are presented with numerous engineering application examples derived from production code. The book reveals the coding techniques used by the best C programmers and shows how experts solve problems in C. It is also an invaluable resource and reference book for seasoned programmers.

C for Engineers and Scientists focuses on systematic software design approach in C for applications in engineering and science following the C99, the latest standard developed by the ANSI and ISO C Standard Committees which resolved many deficiencies of C99 for applications in engineering and science.

The book includes a companion CD which contains the C/C++ interpreter Ch for use as an instructional tool as well as Visual C++ and gcc/g++ compilers to help teaching and learning of C and C++. Ch presents a pedagogically effective user-friendly interactive computing environment for the simplest possible teaching/learning computer programming in C so that the students can focus on improving their program design and problem solving skills.

FEATURES
- Clear explanation of working principles of scientific computing in C for solving engineering and science problems featuring the most complete coverage of new features in C99.
- Over 350 well-documented complete sample programs and 500 carefully designed exercises are included. Many use simple graphical plotting functions for visualization in engineering and science.
- Extensive coverage of cross-platform software development and 64-bit programming as well as introductions to object-based programming in C++, and numerical computing in Ch and MATLAB.
- Comprehensive supplementary teaching resources including Solutions Manual for exercises in each chapter, Instructor’s Guide, and 1,600 PowerPoint slides for lectures and discussions. These are included in the companion website for instructors.
- The Ch C/C++ interpreter and IDE is included on a companion CD with each copy of the text. The CD also includes references for all functions in the standard C libraries with a sample application program for each function.
Contents
Part I: Structured Programming in C
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Chapter 2 Getting Started
Chapter 3 Number Systems, Scalar Types, and Input/Output
Chapter 4 Operators and Expressions
Chapter 5 Statements and Control Flow
Chapter 6 Functions
Chapter 7 Processing Directives
Chapter 8 Storage Classes and Program Structure
Chapter 9 Formatted Input and Output
Chapter 10 Arrays
Chapter 11 Pointers
Chapter 12 Characters and Strings
Chapter 13 Structures, Enumerations, Unions, and Bit Fields
Chapter 14 File Processing
Chapter 15 Dynamic Data Structures and Cross-Platform Software Development
Chapter 16 Scientific Computing in the Entire Real Domain in C99
Chapter 17 Programming with Complex Numbers in C99 and C++

Part II: Object-Based Programming in C++
Chapter 18 Introduction to C++
Chapter 19 Classes and Object-Based Programming in C++
Chapter 20 Two- and Three-Dimensional Plotting in C++

Part III: Numerical Computing in C
Chapter 21 Computational Arrays and Matrix Computations in C
Chapter 22 Advanced Numerical Analysis in C

Part IV: Numerical Computing in MATLAB
Chapter 23 Introduction to MATLAB and Comparison Study with C/C++

Appendices
A Keywords
B C99 Features Supported in Ch
C C++ Features Supported in Ch
D The ASCII Character Set

An Introduction to Object-Oriented Programming with Java takes a full-immersion approach to object-oriented programming. Proper object-oriented design practices are emphasized throughout the book. Students learn how to use the standard classes first, then learn to design their own classes. Wu uses a gentler approach to teaching students how to design their own classes, separating the coverage into two chapters. GUI coverage is also located independently in the back of the book and can be covered if desired. Wu also features a robust set of instructors’ materials including PowerPoint slides, code samples, and quiz questions.

NEW TO THIS EDITION
- More Discussion on Java 5.0 Features and Java 6.0 compatibility.
- Exercises are organized by level of difficulty. - The one-star level exercises require the basic understanding of the materials covered in the chapter. - The two-star level exercises require some additional thinking beyond the basic understanding. - The three-star level exercises are most difficult and require significant effort. For some of the three-star exercises, students must find or study additional information beyond those presented in the book. Please keep in mind that the levels of difficulty are only a general guideline. One student may find some level-three exercises much easier than level-two exercises, for example.
- More Examples from the Natural Sciences are provided in several key chapters.
- Retained coverage of GUI and included JOptionPane.

Contents
Chapter 0 Introduction to Computers and Programming Languages
Chapter 1 Introduction to Object-Oriented Programming and Software Development
Chapter 2 Getting Started with Java
Chapter 3 Numerical Data
Chapter 4 Defining Your Own Classes--Part 1
Chapter 5 Selection Statements
Chapter 6 Repetition Statements
Chapter 7 Defining Your Own Classes--Part 2
Chapter 8 Exceptions and Assertions
Chapter 9 Characters and Strings
Chapter 10 Arrays
Chapter 11 Sorting and Searching
Chapter 12 File Input and Output
Chapter 13 Inheritance and Polymorphism
Chapter 14 GUI and Event-Driven Programming
Chapter 15 Recursive Algorithms
Appendix A How to Run Java Programs
This book was developed to address the difficulty beginning students often find reading computer language texts. Tan and D’Orazio aim to make the process of learning a first language easier and fun, by involving readers in their text, holding their interest, and getting them to think about the meaning and uses of C code. The authors accomplish this goal by using a question and answer style, where the reader’s thought processes are stimulated by the same questions about code that students themselves often ask. Tan and D’Orazio answer these questions clearly and directly, focusing the reader’s attention on the important issues of C programming. The new co-authors, Or and Choy have further enhanced on this book by “condensing” the book by focusing on the essential programming content. The end product is a book which arouses the student’s interest and guides the student along as he / she learns the necessary programming concepts.

CONTENTS
1 Programming Fundamentals
2 The Basics of C—Math Functions, and Input/Output
3 Beginning Decision Making and Looping
4 Functions
5 Numeric Arrays
6 File Input/Output, Strings and Pointers
7 Structures and Large Program Design
8 Introduction to C++
A CONCISE INTRODUCTION TO MATLAB
by William J. Palm III
2008 (October 2007) / Softcover / 448 pgs / 125 illus
ISBN: 9780073385839
ISBN: 9780071263726 [IE]
www.mhhe.com/palm

A Concise Introduction to Matlab is a simple, concise book designed to cover all the major capabilities of MATLAB that are useful for beginning students. Thorough coverage of Function handles, Anonymous functions, and Subfunctions. In addition, key applications including plotting, programming, statistics and model building are also all covered. MATLAB is presently a globally available standard computational tool for engineers and scientists. The terminology, syntax, and the use of the programming language are well defined and the organization of the material makes it easy to locate information and navigate through the textbook.

CONTENTS
1 An Overview of MATLAB
2 Numeric, Cell, and Structure Arrays
3 Functions and Files
4 Decision-Making Programs
5 Advanced Plotting and Model Building
6 Statistics, Probability, and Interpolation
7 Numerical Methods for Calculus and Differential Equations
8 Symbolic Processing

MATHCAD: A TOOL FOR ENGINEERS AND SCIENTISTS (B.E.S.T. SERIES)
Second Edition
by Philip J. Prieto, Manhattan College
2008 (August 2007) / Softcover / 224 pages
ISBN: 9780077231569 (with CD-Rom)
ISBN: 9780071266987 [IE]
www.mhhe.com/best

Mathcad: A Tool for Engineering Problem Solving explains how to use Mathcad 13 (Student and Standard). This book is current with the latest release of mathcad, with the focus on the fundamentals, is enriched with great motivating applications, solid homework problems, appealing to both engineers and scientists.

CONTENTS
1 What Is Mathcad and Why Use It?
2 The Basics of Mathcad
3 How to Graph Functions
4 Symbolic and Numeric Calculus
5 How to Solve Equations
6 Vectors, Matrices, and More
7 Solving Ordinary Differential Equations
8 Doing Statistics with Mathcad
9 Importing and Exporting, the Web, and Some Advanced Concepts

FORTRAN 95/2003 FOR SCIENTISTS & ENGINEERS
Third Edition
by Stephen J. Chapman, BAE SYSTEMS Australia
2008 (April 2007) / Softcover / 1008 pages / 245 illus
ISBN: 9780073191577
ISBN: 9780071285780 [IE]
www.mhhe.com/chapmanfte

Chapman’s Fortran for Scientists and Engineers is intended for both first year engineering students and practicing engineers. This text is the most current alternative for Fortran. It simultaneously teaches the Fortran 95/2003 programming language, structured programming techniques, and good programming practice. Among its strengths are its concise, clear explanations of Fortran syntax and programming procedures, the inclusion of a wealth of examples and exercises to help students grasp difficult concepts, and its explanations about how to understand code written for older versions of Fortran.

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1 Introduction to Computers and the Fortran Language
2 Basic Elements of Fortran
3 Program Design and Branching Structures
4 Loops and Character Manipulation
5 Basic I/O Concepts
6 Introduction to Arrays
7 Introduction to Procedures
8 Additional Features of Arrays
9 Additional Features of Procedures
10 More about Character Variables
11 Additional Intrinsic Data Types
12 Derived Data Types
13 Advanced Features of Procedures and Modules
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15 Pointers and Dynamic Data Structures
16 Object-Oriented Programming in Fortran
17 Redundant, Obsolescent, and Deleted Fortran Features
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Appendix B Fortran 95/2003 Intrinsic Procedures
Appendix C Order of Statements in a Fortran 95/2003 Program
Appendix D Glossary
Appendix E Answers to Quizzes
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3. Getting Started
4. Tutorial: Getting Started (X/Motif)
5. Tutorial: Getting Started (CDE)

PART II: UNIX FILE SYSTEM

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8. Tutorial: Working with Directories
9. Tutorial: Using File Manager

PART III: UNIX SHELLS

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Appendix D: write and talk
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Appendix F: Using make
Introduction to Engineering Ethics

New Edition

International Edition

Introduction to Engineering and the Environment

by Edward S Rubin and Cliff Davidson, both of the Carnegie Mellon University

2001 / 576 pages
ISBN: 9780072354676
ISBN: 9780071181853 [IE]

http://mhhe.com/engcs/civil/rubin

Contents
I: Motivation and Framework
1 Engineering and the Environment
2 Overview of Environmental Issues
II: Case Studies in Design for the Environment
3 Automobiles and the Environment
4 Batteries and the Environment
5 Power Plants and the Environment
6 Refrigeration and the Environment
7 Environmental Life Cycle Assessments
III: Case Studies in Environmental Modeling
8 Controlling Urban Smog
9 CFCs and the Ozone Layer
10 Global Warming and Climate Change
11 Toxic Metals in the Environment
12 PCBs in the Aquatic Environment
IV: Topics in Engineering and Environmental Policy
13 Economic Analysis
14 Environmental Risk and Decision Analysis
Appendices

International Edition

Environmental Impact Assessment

Engineering Principles and Management Issues

Second Edition

by Larry Carter, University of Oklahoma

1996 / 480 pages / Hardcover
ISBN: 9780070097674 (Out-of-Print)
ISBN: 9780071141031 [IE]

Contents
1 National Environmental Policy Act and Its Implementation
2 Planning and Management of Impact Studies
3 Simple Methods for Impact Identification Matrices, Networks and Checklists
4 Description of Environmental Setting
5 Environmental Indicators and Indicators for Describing the Affected Environment
6 Prediction and Assessment of Impacts on the Air Environment
7 Prediction and Assessment of Impacts on the Surface Water Environment
8 Prediction and Assessment of Impacts on the Soil and Ground Water Environment
9 Prediction and Assessment of Impacts on the Noise Environment
10 Prediction and Assessment of Impacts on the Biological Environment
11 Habitat Methods for Biological Impact Prediction and Assessment
12 Prediction and Assessment of Impacts on the Cultural (Historical/Archaeological) Environment
13 Prediction and Assessment of Visual Impacts
14 Prediction and Assessment of Impacts on the Socioeconomic Environment

Introduction to Engineering Ethics

Provides the background for discussion of the basic issues in engineering ethics. Emphasis is given to the moral problems engineers face in the corporate setting. It places those issues within a philosophical framework, and it seeks to exhibit their social importance and intellectual challenge. The primary goal is to stimulate critical and responsible reflection on moral issues surrounding engineering practice and to provide the conceptual tools necessary for pursuing those issues.

Students preparing to function within the engineering profession need to be introduced to the basic issues in engineering ethics.

New to this edition:
- The book has expanded from 6 to 10 chapters, with increased coverage given to moral reasoning and codes of ethics, personal commitments in engineering, environmental ethics, honesty and research integrity, the philosophy of technology, peace engineering, and computer science.
- The inclusion of new case studies such as global warming and Hurricane Katrina.

Contents
1 Ethics and Professionalism
2 Moral Reasoning and Codes of Ethics
3 Moral Frameworks
4 Engineering as Social Experimentation
5 Commitment to Safety
6 Workplace Responsibilities and Rights
7 Truth and Truthfulness
8 Computer Ethics
9 Environmental Ethics
10 Global Justice
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GENERAL ENGINEERING

ETHICS IN ENGINEERING
Fourth Edition
by Mike Martin, Chapman College; and Roland Schinzinger, University of California, Irvine
2005 / 350 pages
ISBN: 9780072831153
ISBN: 9780071112932 [IE]

CONTENTS
1 Professionalism and Ethics
2 Moral Reasoning
3 Theories of Right Conduct
4 Character
5 Engineering as Social Experimentation
6 Commitment to Safety
7 Workplace Responsibilities and Rights
8 Honesty
9 Environmental Ethics
10 Global Economy
11 Engineers and Technological Change
Appendix A: General Resources on Engineering Ethics
Appendix B: Codes of Ethics: NSPE, ABET, IEEE, AICHE, ASCE, ASME

Technical Writing

POCKET BOOK OF TECHNICAL WRITING FOR ENGINEERS & SCIENTISTS
Third Edition
by Leo Finkelstein, Wright State University-Dayton
2008 (January 2007) / Softcover / 400 pages
ISBN: 9780073191591
ISBN: 9780071259255 [IE]

The focus of this text is to teach engineering students the skill of technical writing. The book is unique in that it gets to the point, uses practical outlines throughout, and shows students how to produce the most common technical documents step-by-step, in a manner that is fun and interesting to students. With ABET increasing the emphasis on technical writing, this affordable, straightforward, easy-to-understand text with flexible coverage, would be a perfect fit for your technical writing course. Each chapter has an end of chapter critique, which allows students to implement what they have learned in the chapter. This is new!

CONTENTS
1 Introduction
2 Ethical Considerations
3 Technical Definition
4 Descriptions of a Mechanism
5 Descriptions of a Process
6 Proposals
7 Progress Reports
8 Feasibility and Recommendation Reports
9 Laboratory and Project Reports
10 Instructions and Manuals
11 Research Reports
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Numerical Methods

International Edition

NUMERICAL METHODS FOR ENGINEERS
Sixth Edition
by Steven C. Chapra, Tufts University, and Raymond P. Canale,
Emeritus University of Michigan

2010 (April 2009) / Hardcover / 960 pages
ISBN: 9780073401065
ISBN: 9780071267595 [IE]

www.mhhe.com/chapra

Instructors love Numerical Methods for Engineers because it makes teaching easy! Students love it because it is written for them—with clear explanations and examples throughout. The text features a broad array of applications that span all engineering disciplines. The sixth edition retains the successful instructional techniques of earlier editions. Chapra and Canale's unique approach opens each part of the text with sections called Motivation, Mathematical Background, and Orientation. This prepares the student for upcoming problems in a motivating and engaging manner. Each part closes with an Epilogue containing Trade-Offs, Important Relationships and Formulas, and Advanced Methods and Additional References. Much more than a summary, the Epilogue deepens understanding of what has been learned and provides a peek into more advanced methods.

Approximately 20% of the problems are new or revised in this edition. The expanded breadth of engineering disciplines covered is especially evident in the problems, which now cover such areas as biotechnology and biomedical engineering.

Users will find use of software packages, specifically MATLAB®, Excel® with VBA and Mathcad®,. This includes material on developing MATLAB® m-files and VBA macros.

NEW TO THIS EDITION

✓ Approximately 20% of the problems are new or revised for this edition.

FEATURES

✓ Challenging problems drawn from all engineering disciplines are included in the text.
✓ Chapra is know for his clear explanations and elegantly rendered examples.
✓ Users will have access to a book specific website which will house instructor's Solutions Manual, PowerPoint slides of all text figures, M-Files, general textbook information and more!

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27 Boundary-Value and Eigenvalue Problems
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SCHAUM'S OUTLINE OF NUMERICAL ANALYSIS
Second Edition
by Francis Scheid, Ph.D., Boston University
1989 / Softcover / 471 pages
ISBN: 9780070552210
(A Schaum's Publication)
CONTENTS

SCHAUM'S OUTLINE OF MATHEMATICAL HANDBOOK OF FORMULAS AND TABLES
Third Edition
by Murray R. Spiegel (deceased), Seymour Lipschutz, Temple University-Philadelphia, and John Liu, University of Maryland
2008 / Softcover / 312 pages
ISBN: 9780071548557
(A Schaum's Publication)
This third edition covers elementary concepts in algebra, geometry, etc. and more advanced concepts in differential equations and vector analysis. It also expands its section on Probability and Statistics and includes a new section on Financial Mathematics to keep up with the current developments in finance studies as well as in the studies of math and the sciences.

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2. Geometry
3. Elementary Transcendental Functions
4. Calculus
5. Differential Equations and Vector Analysis
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2. Factorial and Gamma Function, Binomial Coefficients
3. Bessel Functions
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5. Elliptic Integrals
6. Financial Tables
7. Probability and Statistics

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Statistics for Engineers and Scientists stands out for its crystal clear presentation of applied statistics. Suitable for a one or two semester course, the book takes a practical approach to methods of statistical modeling and data analysis that are most often used in scientific work.

Statistics for Engineers and Scientists features a unique approach highlighted by an engaging writing style that explains difficult concepts clearly, along with the use of contemporary real world data sets to help motivate students and show direct connections to industry and research. While focusing on practical applications of statistics, the text makes extensive use of examples to motivate fundamental concepts and to develop intuition.

NEW TO THIS EDITION
- Over 250 new problems have been added
- A new section was added on Tolerance and Prediction Intervals in Chapter 5; the discussion of controlled experiments and observational studies was added to Chapter 1; and confounding in controlled experiments was added in Chapter 7.
- A CONNECT site features power points, Datasets, image library, solutions, and algorithmic problems.

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Chapter 4: Commonly Used Distributions
Chapter 5: Confidence Intervals
Chapter 6: Hypothesis Testing
Chapter 7: Correlation and Simple Linear Regression
Chapter 8: Multiple Regression
Chapter 9: Factorial Experiments
Chapter 10: Statistical Quality Control
A Tables
B Partial Derivatives
C Suggestions for Further Reading
Answers to Selected Exercises

Principles of Statistics for Engineers and Scientists offers the same crystal clear presentation of applied statistics as Bill Navidi's Statistics for Engineers and Scientists text, in a manner especially designed for the needs of a one-semester course that focuses on applications.

The text features a unique approach accentuated by an engaging writing style that explains difficult concepts clearly. By presenting ideas in the context of real-world data featured in plentiful examples, the book motivates students to understand fundamental concepts through practical examples found in industry and research.

FEATURES
- ARIS, McGraw-Hill's Online Homework Manager, features algorithmic problems and gradebook capability. Instructors will have access to data sets, solutions, lecture PowerPoint, and images from the text.
- A commitment to accuracy for which Bill Navidi's texts have become known.
- In line with modern trends, the text contains exercises suitable for solving with computer software. These examples and exercises involve interpreting, as well as generating, computer output. The student edition of MINITAB®, the widely used statistical software package is available bundled with the text.
- With a focus on applications, the presentation is condensed to allow for coverage of a greater number of topics in a one-semester course.
- Topics are organized to allow for flexibility in the order of presentation. An introduction to descriptive aspects of linear regression is presented in Chapter 2, which is useful for courses in which there is not enough time to cover inferential methods. Inferential methods are presented in Chapter 8.
- Many examples and exercises use data from articles published in scientific journals. This motivates students by showing them that the concepts they are learning are actually used by scientists and engineers.

CONTENTS
1 Sampling and Descriptive Statistics
2 Summarizing Bivariate Data
3 Probability
4 Commonly Used Distributions
5 Point and Interval Estimation for a Single Sample
6 Hypothesis Tests for a Single Sample
7 Inferences for Two Samples
8 Inference in Linear Models
9 Factorial Experiments
10 Statistical Quality Control
OPERATIONS RESEARCH
by P. V. Iyer
2008 / Softcover / 288 pages
ISBN: 9780070669024
(McGraw-Hill India Title)
Operations Research—the mathematical analysis of a process, used in making decisions—is an interdisciplinary branch of Applied Mathematics. This book, meant for the course on OR, to be taken up by the engineering students of all branches, offers lucid presentation of the subject aided by plenty of solved and unsolved problems.

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15. Dynamic Programming
16. Sequencing Problems
17. Queueing Theory
18. Inventory Models
19. Replacement Models
20. Project Scheduling (PERT and CPM)
21. Simulation

International Edition

INTRODUCTION TO PROBABILITY AND STATISTICS:
Principles and Applications for Engineering and the Computing Sciences
Fourth Edition
by J. Susan Milton, Radford University, and Jesse C. Arnold, Virginia Polytechnic Institute
2003 / Hardcover / 816 pages
ISBN: 9780072468366
ISBN: 9780071242486 [IE]
www.mhhe.com/miltonarnold

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14.5 2^k Factorial Experiments in an Incomplete Block Design
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15.1 Multinomial Distribution
15.2 Chi-Squared Goodness of Fit Tests
15.3 Testing for Independence
15.4 Comparing Proportions
16 Statistical Quality Control
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GENERAL ENGINEERING

10. Converting Units
11. Solving Single Equations
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16. Finding Optimum Solutions
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INTRODUCTION TO GRAPHICS
COMMUNICATIONS FOR ENGINEERS
(B.E.S.T SERIES)
Fourth Edition
by Gary Robert Bertoline, Purdue University-West Lafayette
2009 (April 2008) / Softcover / 320 pages
ISBN: 978007352264-7
www.mhhe.com/bertoline
Bertoline's texts are the leading books in the engineering and technical
graphics fields. Introduction to Graphics Communication for Engineers
presents both traditional and modern approaches to engineering
graphics, providing engineering and technology students a strong
foundation in graphics methods through visualization, drawing, draft-
ing, CAD software, and 3-D modeling. A strong emphasis on design
in industry is found throughout, reinforcing the real and practical ways
that technical graphics skills are used by engineers.

Introduction to Graphics Communications for Engineers is part of
McGraw-Hill's B.E.S.T. series that introduces students to standard
practices and tools used by engineers and engineering students.

CONTENTS
1. Introduction to Graphics Communications
2. Sketching and Text
3. Section and Auxiliary Views
4. Dimensioning and Tolerancing Practices
5. Reading and Constructing Working Drawings
6. Design and 3-D Modeling

A CONCISE INTRODUCTION TO MATLAB
by William J. Palm III
2008 (October 2007) / Softcover / 448 pgs / 125 illus
ISBN: 9780073385839
ISBN: 9780071263726 [IE]
www.mhhe.com/palm
A Concise Introduction to Matlab is a simple, concise book designed
to cover all the major capabilities of MATLAB that are useful for begin-
ing students. Thorough coverage of Function handles, Anonymous
functions, and Subfunctions. In addition, key applications including
plotting, programming, statistics and model building are also all
covered. MATLAB is presently a globally available standard compu-
tational tool for engineers and scientists. The terminology, syntax,
and the use of the programming language are well defined and the
organization of the material makes it easy to locate information and
guidance through the textbook.

CONTENTS
1. An Overview of MATLAB
2. Numeric, Cell, and Structure Arrays
3. Functions and Files
4. Decision-Making Programs
5. Advanced Plotting and Model Building
6. Statistics, Probability, and Interpolation
7. Numerical Methods for Calculus and Differential Equations
8. Symbolic Processing

FORTRAN 95/2003 FOR SCIENTISTS &
ENGINEERS
Third Edition
by Stephen J. Chapman, BAE SYSTEMS Australia
2008 (April 2007) / Softcover / 1008 pages / 245 illus
ISBN: 9780073191577
ISBN: 9780071285780 [IE]
www.mhhe.com/chapman3e
Chapman's Fortran for Scientists and Engineers is intended for both
first year engineering students and practicing engineers. This text is
the most current alternative for Fortran. It simultaneously teaches the
Fortran 95/2003 programming language, structured programming
techniques, and good programming practice. Among its strengths are
its concise, clear explanations of Fortran syntax and programming
procedures, the inclusion of a wealth of examples and exercises to
help students grasp difficult concepts, and its explanations about how
to understand code written for older versions of Fortran.

CONTENTS
1. Introduction to Computers and the Fortran Language
2. Basic Elements of Fortran
3. Program Design and Branching Structures
4. Loops and Character Manipulation
5. Basic I/O Concepts
6. Introduction to Arrays
7. Introduction to Procedures
8. Additional Features of Arrays
9. Additional Features of Procedures
10. More about Character Variables
11. Additional Intrinsic Data Types
12. Derived Data Types
13. Advanced Features of Procedures and Modules
14. Advanced I/O Concepts
15. Pointers and Dynamic Data Structures
16. Object-Oriented Programming in Fortran
17. Redundant, Obsolescent, and Deleted Fortran Features
Appendix A ASCII and EBCDIC Coding Systems
Appendix B Fortran 95/2003 Intrinsic Procedures
Appendix C Order of Statements in a Fortran 95/2003 Program
Appendix D Glossary
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GENERAL ENGINEERING

MATHCAD: A TOOL FOR ENGINEERS AND SCIENTISTS (B.E.S.T. SERIES)
Second Edition
by Philip J. Pritchard, Manhattan College
2008 (August 2007) / Softcover / 224 pages
ISBN: 9780077231569  (with CD-Rom)
ISBN: 9780071266987  [IE]
www.mhhe.com/best

Mathcad: A Tool for Engineering Problem Solving explains how to use Mathcad 13 (Student and Standard). This book is current with the latest release of mathcad, with the focus on the fundamentals, is enriched with great motivating applications, solid homework problems, appealing to both engineers and scientists.

CONTENTS
1 What Is Mathcad and Why Use It?
2 The Basics of Mathcad
3 How to Graph Functions
4 Symbolic and Numeric Calculus
5 How to Solve Equations
6 Vectors, Matrices, and More
7 Solving Ordinary Differential Equations
8 Doing Statistics with Mathcad
9 Importing and Exporting, the Web, and Some Advanced Concepts

CONCEPTS IN ENGINEERING
Second Edition
by Mark T. Holtzapple, Texas A & M University, and W. Dan Reece, Texas A & M University
2008 (January 2007) / Softcover / 304 pages
ISBN: 9780073191621
www.mhhe.com/best

The second edition of Holtzapple and Reece’s widely popular text, Concepts in Engineering, introduces fundamental engineering concepts to freshman engineering students. Its central focus is to positively motivate students for the rest of their engineering education, as well as their future engineering. Due to the book’s concise, yet comprehensive coverage, it can be used in a wide variety of introductory courses. Text is for students who are not sure if they want to be engineers and the book almost acts as a "hook". Holtzapple’s approach is different than Eide’s text which expects students to go into engineering.

CONTENTS
1. Preparing to Be an Engineer
2. The Engineer
3. Engineering Ethics
4. Problem Solving
5. Introduction to Design
6. Engineering Communications
7. Numbers
8. Tables and Graphs
9. SI System of Units
10. Unit Conversions
Appendices
Topic Index
Biographical Index

SPREADSHEET TOOLS FOR ENGINEERS USING EXCEL
Third Edition
by Byron S Gottfried, University of Pittsburgh-Pittsburgh
2007 / Softcover / 512 pages
ISBN: 9780072971842
ISBN: 9780071106634  [IE]
www.mhhe.com/gottfried3e

CONTENTS
Part I: Excel Fundamentals
1. Engineering Analysis and Spreadsheets
2. Creating an Excel Worksheet
3. Editing an Excel Worksheet
4. Graphing Data
5. Organizing Data
6. Transferring Data
Part II: Engineering Applications
7. Converting Units
8. Analyzing Data Statistically
9. Fitting Equations to Data
10. Solving Single Equations
11. Solving Simultaneous Equations
12. Evaluating Integrals
13. Making Logical Decisions (IF-THEN-ELSE)
14. Recording and Running Macros
15. Comparing Economic Alternatives
16. Finding Optimum Solutions
Appendix
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INTRODUCTION TO MATLAB 7 FOR ENGINEERS
Second Edition
by William Palm, University of Rhode Island—Kingston
2005 / 752 pages
ISBN: 9780072922424 (with Bind-In Card
ISBN: 9780071232623 [IE]
www.mhhe.com/palm

CONTENTS
1 An Overview of MATLAB
2 Numeric, Cell, and Structure Arrays
3 Functions and Files
4 Programming with MATLAB
5 Advanced Plotting and Model Building
6 Linear Algebraic Equations
7 Probability, Statistics, and Interpolation
8 Numerical Calculus and Differential Equations
9 Simulink
10 Symbolic Processing with MATLAB
Appendix A: Guide to Commands and Functions in this Text
Appendix B: Animation and Sound in MATLAB
Appendix C: Formatted Output in MATLAB
Appendix D: References
Appendix E: Some Project Suggestions (Online)
Answers to Selected Problems
C PROGRAMMING FOR ENGINEERING AND COMPUTER SCIENCE
(B.E.S.T Series)
by H H Tan, Morrison Knudsen Corporation, and T.B. D’Orazio
1999 / 600 pages / Softcover
ISBN: 9780079136787
ISBN: 9780071167888 [IE with 3.5” Disk]
http://highered.mcgraw-hill.com/sites/0079136788

CONTENTS
1 Computers and Computing Fundamentals
2 Getting Started with C
3 The Basics of C
4 Beginning Decision Making and Looping
5 Functions
6 Arrays and Index Variables
7 Character Arrays and Strings
8 Pointers, Addresses, and Special Variable Types
9 Introduction to C++

Entrepreneurship

NEW TECHNOLOGY VENTURES
From Idea to Enterprise
Third Edition
By Thomas H. Byers, Stanford University, Richard C. Dorf, University Of California Davis, And Andrew Nelson, University Of Oregon
2011 (January 2010) / Hardcover / 704 pages
ISBN: 9780073380186
ISBN: 9780071289214 [IE]
www.mhhe.com/byers

Technology Ventures provides an action-oriented approach through the use of examples, exercises, cases, sample business plans, and recommended sources for more information. This comprehensive collection of concepts and applications provides both students and professionals with the tools necessary for success in starting and growing a technology enterprise.

Entrepreneurship represents a vital source of change in all facets of society, empowering individuals to seek opportunity where others see insurmountable problems. Technology entrepreneurship is a style of business leadership that involves identifying high-potential, technology-intensive commercial opportunities, gathering resources such as talent and capital, and managing rapid growth and significant risks using principled decision-making skills.

NEW TO THIS EDITION
- Reorganization of Chapters 1-2 introducing the art and science of venturing.
- Chapter 4 on strategy development now contains important sections regarding alliances and social responsibility.
- Expanded coverage of concept story and business plan development materials and tools in Chapter 7.
- New section on clusters and regions of entrepreneurship in Chapter 13.
- New sections on costs and grants were added to Chapters 16 and 18, respectively.
- Three new full-length cases are included in the appendix including two from the famous Harvard Business School archives.

CONTENTS
Part 1: Venture Opportunity, Concept, and Strategy
Chapter 1: Economic Growth and the Technology Entrepreneur
Chapter 2: Opportunity and the Concept Summary
Chapter 3: Vision and the Business Model
Chapter 4: Competitive Strategy
Chapter 5: Innovation Strategies
Part 2: Venture Formation and Planning
Chapter 6: Risk and Return
Chapter 7: The Business Plan
Chapter 8: Types of Ventures
Chapter 9: Knowledge, Learning, and Design
Chapter 10: Legal Formation and Intellectual Property
Part 3: Detailed Functional Planning for the Venture
Chapter 11: The Marketing and Sales Plan
Chapter 12: Organizational Development
Chapter 13: Acquiring and Organizing Resources
Chapter 14: Management of Operations
Chapter 15: Acquisitions and Global Expansion
Part 4: Financing and Building the Venture
Chapter 16: Profit and Harvest
Chapter 17: The Financial Plan
Chapter 18: Sources of Capital
Chapter 19: Presentations and Deal Negotiations
Chapter 20: Leading Ventures to Success
Professional References

PROJECT MANAGEMENT
Fifth Edition
by David L. Cleland, University Of Pittsburgh-Pittsburgh, and Lewis R. Ireland
2007 / Hardcover / 523 pages
ISBN: 9780071471602
ISBN: 9780071262378 [IE]
(A Professional Reference Title)

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Chapter 2: Why Project Management?
Chapter 3: The Project Management Process
Part 2: The Strategic Context of Projects
Chapter 4: When to Use Project Management
Chapter 5: The Strategic Context of Projects
Chapter 6: The Board of Directors and Major Projects
Chapter 7: Project Stakeholder Management
Chapter 8: Strategic Issues in Project Management
Part 3: Organizational Design for Project Management
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Chapter 10: Project Portfolio Management
Chapter 11: Project Authority
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Chapter 15: Project Monitoring, Evaluation, and Control
Chapter 16: The Project Earned Value Management System
Chapter 17: Project Termination
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Chapter 18: Project Leadership
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Part 7: New Prospects
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## NEW TITLES

### INDUSTRIAL ENGINEERING

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<td>Navidi</td>
<td>9780077289317</td>
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This text covers the basic techniques and applications of engineering economy for all disciplines in the engineering profession. The writing style emphasizes brief, crisp coverage of the principle or technique discussed in order to reduce the time taken to present and grasp the essentials. The objective of the text is to explain and demonstrate the principles and techniques of engineering economic analysis as applied in different fields of engineering. This brief text includes coverage of multiple attribute evaluation for instructors who want to include non-economic dimensions in alternative evaluation and the discussion of risk considerations in the appendix, compared to Blanks comprehensive text, where these topics are discussed in two unique chapters.

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Chapter 2: Factors: How Time and Interest Affect Money
Chapter 3: Combining Factors
Chapter 4: Nominal and Effective Interest Rates
Chapter 5: Present Worth Analysis
Chapter 6: Rate of Return Analysis: Single Alternative
Chapter 7: Benefit/Cost Analysis and Public Sector Economics
Chapter 8: Making Choices: the Method, MARR, and Multiple Attributes
Chapter 9: Breakeven Analysis
Chapter 10: Replacement and Retention Decisions
Chapter 11: Selection from Independent Projects Under Budget Limitation
Chapter 12: Cost Estimation and Indirect Cost Allocation
Chapter 13: Depreciation Methods
Chapter 14: After-Tax Economic Analysis
Chapter 15: Formalized Sensitivity Analysis and Expected Value Decisions
Chapter 16: More on Variation and Decision Making Under Risk
Appendix A: Using Spreadsheets and Microsoft Excel
Appendix B: Basics of Accounting Reports and Business Ratios
Appendix C: Comparing Economic Alternatives (from Gottfried’s, Spreadsheet Tools for Engineers Using Excel)
SCHAUM'S OUTLINE OF ENGINEERING ECONOMICS
By Jose Sepulveda, University of Central Florida; William Souder, University of Pittsburgh; Byron Gottfried, University of Pittsburgh
1984 / 224 pages
ISBN: 9780070238343
(A Schaum's Publication)

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Level 1: This is How It All Starts
Chapter 1: Foundations of Engineering Economy
Chapter 2: Factors: How Time and Interest Affect Money
Chapter 3: Combining Factors
Chapter 4: Nominal and Effective Interest Rates
Level 2: Tools for Evaluating Alternatives
Chapter 5: Present Worth Analysis
Chapter 6: Annual Worth Analysis
Chapter 7: Rate of Return Analysis: Single Alternative
Chapter 8: Rate of Return Analysis: Multiple Alternatives
Chapter 9: Benefit/Cost Analysis and Public Sector Economics
Chapter 10: Making Choices: The Method, MARR, and Multiple Attributes
Level 3: Making Decisions on Real-World Projects
Chapter 11: Replacement and Retention Decisions
Chapter 12: Selection from Independent Projects Under Budget Limitation
Chapter 13: Breakeven Analysis
Level 4: Rounding Out the Study
Chapter 14: Effects of Inflation
Chapter 15: Cost Estimation and Indirect Cost Allocation
Chapter 16: Depreciation Methods
Chapter 17: After-Tax Economic Analysis
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MASTERING CAD/CAM
By Ibrahim Zeid, Northeastern University
2005 / 992 pages / Hardcover
ISBN: 97800729797616 (with Engg Sub Card) (Out of Print)
ISBN: 9780071239332 [IE]
www.mhhe.com/zeid1

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Chapter 2: 3D Modeling and Viewing
Chapter 3: Modeling Aids and Manipulations
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Chapter 5: Customizing CAD/CAM Systems
Part II -- Geometric Modeling:
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Chapter 11: Graphics Display
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Chapter 13: Rendering and Visualization
Chapter 14: Computer Animation
Part IV -- Product Development and Design:
Chapter 15: Mass Property Calculations
Chapter 16: Assembly Modeling
Chapter 17: Finite Element Modeling and Analysis
Chapter 18: Product Data Exchange
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Part V -- Product Management and Manufacturing:
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17 Nontraditional Machining Processes
18 Joining Processes
19 Surface Treatments
20 Manufacturing of Semiconductor Devices
21 Manufacturing Systems
22 Competitive Aspects of Manufacturing Processes

International Edition

Ergonomics, Work Measurement, Human Factors

International Edition

NIEBEL'S METHODS, STANDARDS, & WORK DESIGN
Twelfth Edition
by Andris Freivalds, Penn State University-University Park, and Benjamin Niebel (deceased)
2009 (March 2008) / Hardcover / 768 pages
ISBN: 9780073376318
ISBN: 9780071270298 [IE]

www.mhhe.com/niebel-freivalds

This edition addresses the increasing global competition and the fact that every industry, business, and service organization is restructuring itself to operate more effectively. Cost-effectiveness and product reliability without excess capacity are the keys to successful activity in business, industry, and government. These keys are the end results of methods engineering.

The 12th edition of Methods, Standards, and Work Design will provide practical, up-to-date descriptions of engineering methods to measure, analyze, and design manual work. The text emphasizes both the manual components and the cognitive aspects of work, recognizing the gradual decline of the manufacturing sector and the growth of the service sector. The importance of ergonomics and work design as part of methods engineering emphasizes not only increased productivity, but also to improve worker health and safety, and thus, company bottom-line costs. In the twenty-first century it is essential that the industrial engineer consider both productivity issues and their efforts on the health and safety of the worker. This comprehensive text addresses this need by integrating the traditional elements of motion and time study along with the human factors and ergonomics and safety engineering.

CONTENTS
Chapter 1: Methods, Standards, and Work Design: Introduction
Chapter 2: Problem-Solving Tools
Chapter 3: Operation Analysis
Chapter 4: Manual Work Design
Chapter 5: Workplace, Equipment, and Tool Design
Chapter 6: Work Environment Design
Chapter 7: Design of Cognitive Work
Chapter 8: Proposed Method Implementation
Chapter 9: Time Study
Chapter 10: Performance Rating
Chapter 11: Allowances
Chapter 12: Standard Data and Formulas
Chapter 13: Predetermined Time Systems
Chapter 14: Work Sampling
Chapter 15: Indirect and Expense Labor Standards
Chapter 16: Standards Follow-Up and Uses

National Edition

INTRODUCTION TO MANUFACTURING PROCESSES
Third Edition
by John Schey, University of Waterloo
2000 / 984 pages
ISBN: 9780070311367
ISBN: 9780071169110 [IE]

www.mhhe.com/eng/mec/mech/schey

CONTENTS
1 Introduction to Manufacturing
2 Manufacturing
3 Geometric Attributes of Manufactured Products
4 Service Attributes of Manufactured Products
5 Materials in Design and Manufacturing
6 Solidification and Heat Treatment of Metals
7 Metal Casting
8 Plastic Deformation of Metals
9 Bulk Deformation Processes
10 Sheet-Metalworking Processes
11 Powder-Metallurgy
12 Processing of Ceramics
13 Polymers and Plastics
14 Processing of Plastics
15 Composites/16 Machining

International Edition

CAD/CAM Principles and Applications
Second Edition
by P N Rao, University of Iowa, USA
2004 / 756 pages
ISBN: 9780070583733
ISBN: 9780071242318 [IE]

(McGraw-Hill India Title)

http://highered.mcgraw-hill.com/sites/0070583730

CONTENTS
1 Introduction
2 CAD/CAM Hardware
3 Computer Graphics
4 Geometric Modelling
5 CAD Standards
6 Introduction to a drafting system
7 Introduction to a modelling systems
8 Finite Element Analysis
9 Introduction to Computer Numerical Control
10 CNC Hardware Basics
11 CNC Tooling
12 CNC Machine tools and Controls systems
13 CNC Programming
14 Turning Centre Programming
15 Advanced Part Programming Methods
16 Computer aided part programming
17 Information Requirements of Manufacturing
18 Group Technology and Computer Aided Process Planning
19 Production Planning and Control
20 Communications
21 Material Handling Systems
22 Flexible Manufacturing Systems
23 Computer Integrated Manufacturing

International Edition

INDUSTRIAL ENGINEERING
Chapter 17: Wage Payment
Chapter 18: Training and Other Management Practices
Appendices
1 Glossary
2 Helpful Formulas
3 Special Tables
4 MIL-STD-1567A

International Edition
HUMAN FACTORS IN ENGINEERING AND DESIGN
Seventh Edition
by Mark S. Sanders, California State University, Northridge; and Ernest J. McCormick, Deceased
1993 / 704 pages
ISBN: 9780070549012
ISBN: 9780071128261 [IE]
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Part I: Introduction
Part II: Information Input
Part III: Human Output and Control
Part IV: Workplace Design
Part V: Environmental Conditions
Part VI: Human Factors Applications
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BUSINESS DYNAMICS:
Systems Thinking and Modeling for a Complex World with CD-ROM
by John Sterman, MIT—Sloan School of Management
2000 / Hardcover with CDROM
ISBN: 9780072389159 (with CD-Rom)
ISBN: 9780071241076 [IE, with CD-Rom]
www.mhhe.com/business/ops/ci/sterman
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1. Learning In and About Complex Systems
2. System Dynamics In Action
3. The Modeling Process
4. Structure and Behavior of Dynamic Systems
Part II. Tools for Systems Thinking
5. Causal Loop Diagrams
6. Stocks and Flows
7. Dynamics of Stocks and Flows
8. Closing the Loop: Dynamics of Simple Structures
Part III. The Dynamics of Growth
10. Path Dependence and Positive Feedback
Part IV. Tools for Modeling Dynamic Systems
11. Delays
12. Coflows and Aging Chains
13. Modeling Decision Making
14. Forming Non-linear Relationships
Part V. Instability and Oscillation
15. Modeling Human Behavior: Bounded Rationality or Rational Expectations?
16. Forecasts and Fudge Factors: Modeling Expectation Formation
17. Supply Chains and the Origin of Oscillations
18. Managing Supply Chains in Manufacturing
20. The Invisible Hand Sometimes Shakes: Commodity Cycles
Part VI. Validation and Model Testing
21. Truth and Beauty
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22. Challenges for the Future
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For over four decades, Introduction to Operations Research by Frederick Hillier has been the classic text on operations research. While building on the classic strengths of the text, the author continues to find new ways to make the text current and relevant to students. One way is by incorporating a wealth of state-of-the-art, user-friendly software and more coverage of business applications than ever before. The hallmark features of this edition include clear and comprehensive coverage of fundamentals, an extensive set of interesting problems and cases, and state-of-the-practice operations research software used in conjunction with examples from the text.

NEW TO THIS EDITION

- Careful updates have been made to the material and references throughout the book to reflect the current state of the art.
- Application vignettes have been added that describe dramatic success stories regarding real applications of operations research to excite students about the relevance of the techniques they are learning.
- The complete articles describing these real applications of operations research also are provided on the website for further reading.
- Added many other references of articles describing other award winning applications of operations research, and some of these articles also are provided on the website.
- New problems have been added that involve reading and commenting on one of the provided articles that describe a dramatic application of operations research.
- A new section has been added on the important emerging topic of revenue management.
- The chapter on the theory of the simplex method has been reorganized.
- Further clarified the presentation in numerous spots throughout the book.
- The Excel® add-ins have been updated for Excel® 2007.
- All companion software available on the website has been updated to the most current version.
OPERATIONS RESEARCH
by P. V. Iyer
2008 / Softcover / 288 pages
ISBN: 9780070669024
(McGraw-Hill India Title)

Operations Research—the mathematical analysis of a process, used in making decisions—is an interdisciplinary branch of Applied Mathematics. This book, meant for the course on OR, to be taken up by the engineering students of all branches, offers lucid presentation of the subject aided by plenty of solved and unsolved problems.

CONTENTS
1. Introduction to OR
2. Linear Programming
3. Simplex Method
4. Artificial Variables
5. Dual Simplex Method
6. Duality
7. Revised Simplex Method
8. Bounded Variable Techniques
9. Integer Programming
10. Sensitivity Analysis
11. Transportation Problem
12. Assignment Problem
13. Decision Theory
14. Theory Of Games
15. Dynamic Programming
16. Sequencing Problems
17. Queuing Theory
18. Inventory Models
19. Replacement Models
20. Project Scheduling (PERT and CPM)
21. Simulation

SCHAUM'S OUTLINE OF OPERATIONS RESEARCH
Second Edition
by Richard Bronson, Fairleigh Dickinson University
1998 / 352 pages
ISBN: 9780070080201
(A Schaum's Publication)

Tackling the broad range of allocation problems that actually confront engineers, programmers and analysts in today's business and industrial worlds, this book takes readers step-by-step through all the mathematical programming techniques—including the trailblazing Karmarkar algorithm—needed to excel in any operations research course. It's easy to see why the first edition of this invaluable study guide sold more than 35,000 copies! It cuts down study time while it builds essential skills.
After a brief introductory chapter, Factory Physics 3/e is divided into three parts: I – The Lessons of History; II – Factory Physics; and III – Principles in Practice. The scientific approach to manufacturing and supply chain management, developed in Part II, is unique to this text. No other text or professional book provides a rigorous, principles-based foundation for manufacturing management. The Third Edition offers tighter connections between Lean Manufacturing, MRP/ERP, Six Sigma, Supply Chain Management, and Factory Physics. In addition to enhancing the historical overview of how these systems evolved, the authors show explicitly how users can achieve Lean Manufacturing objectives (faster response, less inventory) using the integration aspects of MRP/ERP/SCM systems along with the variance analysis methods of Six Sigma. Factory Physics provides the overarching framework that coordinates all of these initiatives into a single-focused strategy.

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PART I: THE LESSONS OF HISTORY
Chapter 1: Manufacturing in America
Chapter 2: Inventory Control: From EOQ to RDP
Chapter 3: The MRP Crusade
Chapter 4: The JIT Revolution
Chapter 5: What Went Wrong
PART II: FACTORY PHYSICS
Chapter 6: A Science of Manufacturing
Chapter 7: Basic Factory Dynamics
Chapter 8: Variability Basics
Chapter 9: The Corrupting Influence of Variability
Chapter 10: Push and Pull Production Systems
Chapter 11: The Human Element in Operations Management
Chapter 12: Total Quality Manufacturing
PART III: PRINCIPLES IN PRACTICE
Chapter 13: A Pull Planning Framework
Chapter 14: Shop Floor Control
Chapter 15: Production Scheduling
Chapter 16: Aggregate and Workforce Planning
Chapter 17: Supply Chain Management
Chapter 18: Capacity Management
Chapter 19: Synthesis-Pulling It All Together
Simulation with Arena provides a comprehensive treatment of simulation using industry-standard Arena software. The text starts by having the reader develop simple high-level models, and then progresses to advanced modeling and analysis. Statistical design and analysis of simulation experiments is integrated with the modeling chapters, reflecting the importance of mathematical modeling of these activities.

An informal, tutorial writing style is used to aid the beginner in fully understanding the ideas and topics presented. The academic version of Arena and example files are available through the book’s website. Verified instructors can also download a 30-seat site license of Arena for use in their course.

NEW TO THIS EDITION

- Text features coverage of the latest academic version of Arena software.
- New software capabilities are included in later chapters.
- New Exercises in all the chapters, updated with solutions in the new software.

CONTENTS

1. What Is Simulation?
2. Fundamental Simulation Concepts
3. A Guided Tour Through Arena
4. Modeling Basic Operations and Inputs
5. Modeling Detailed Operations
6. Statistical Analysis of Output from Terminating Simulations
7. Intermediate Modeling and Steady-State Statistical Analysis
8. Entity Transfer
9. A Sampler of Further Modeling Issues and Techniques
10. Arena Integration and Customization
11. Continuous and Combined Discrete/Continuous Models
12. Further Statistical Issues
13. Conducting Simulation Studies
   Appendix B: A Refresher on Probability and Statistics
   Appendix C: Arena’s Probability Distributions
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International Edition

**NEW**

**PRINCIPLES OF STATISTICS FOR ENGINEERS AND SCIENTISTS**

by William C. Navidi, Colorado School Of Mines

2010 (January 2009) / Hardcover / 608 pages
ISBN: 9780077289317
ISBN: 9780070166974 [IE]

www.mhhe.com/navidi

Principles of Statistics for Engineers and Scientists offers the same crystal clear presentation of applied statistics as Bill Navidi’s Statistics for Engineers and Scientists text, in a manner especially designed for the needs of a one-semester course that focuses on applications.

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**FEATURES**

- ARIS, McGraw-Hill's Online Homework Manager, features algorithmic problems and gradebook capability. Instructors will have access to data sets, solutions, lecture PowerPointS, and images from the text.
- A commitment to accuracy for which Bill Navidi’s texts have become known.
- In line with modern trends, the text contains exercises suitable for solving with computer software. These examples and exercises involve interpreting, as well as generating, computer output. The student edition of MINITAB®, the widely used statistical software package is available bundled with the text.
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- Many examples and exercises use data from articles published in scientific journals. This motivates students by showing them that the concepts they are learning are actually used by scientists and engineers.

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3 Probability
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6 Hypothesis Tests for a Single Sample
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**APPLIED LINEAR STATISTICAL MODELS**

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INTRODUCTION TO PROBABILITY AND STATISTICS:
Principles and Applications for Engineering and the Computing Sciences
Fourth Edition
by J. Susan Milton, Radford University, and Jesse C. Arnold, Virginia Polytechnic Institute
2003 / Hardcover / 816 pages
ISBN: 9780072468366
ISBN: 9780071242486 [IE]
www.mhhe.com/miltonarnold

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INDUSTRIAL ENGINEERING

SCHAUM’S OUTLINE OF PROBABILITY, RANDOM VARIABLES, AND RANDOM PROCESSES
by Hwei Hsu, Fairleigh Dickinson University
1997 / Softcover / 320 pages
ISBN: 9780070306448
(A Schaum’s Publication)
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Probability.
Random Variables.
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Functions of Random Variables.
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Numerical Methods

NEW
International Edition

NUMERICAL METHODS FOR ENGINEERS
Sixth Edition
by Steven C. Chapra, Tufts University, and Raymond P. Canale,
Emeritus University of Michigan
2010 (April 2009) / Hardcover / 960 pages
ISBN: 9780073401065
ISBN: 9780071267595 [IE]

www.mhhe.com/chapra

Instructors love Numerical Methods for Engineers because it makes teaching easy! Students love it because it is written for them—with clear explanations and examples throughout. The text features a broad array of applications that span all engineering disciplines. The sixth edition retains the successful instructional techniques of earlier editions. Chapra and Canale’s unique approach opens each part of the text with sections called Motivation, Mathematical Background, and Orientation. This prepares the student for upcoming problems in a motivating and engaging manner. Each part closes with an Epilogue containing Trade-Offs, Important Relationships and Formulas, and Advanced Methods and Additional References. Much more than a summary, the Epilogue deepens understanding of what has been learned and provides a peek into more advanced methods.

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FEATURES
✓ Challenging problems drawn from all engineering disciplines are included in the text.
✓ Chapra is known for his clear explanations and elegantly rendered examples.
✓ Users will have access to a book specific website which will house Instructor’s Solutions Manual, PowerPoint slides of all text figures, M-Files, general textbook information and more!

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SUSTAINABILITY IN THE PROCESS
INDUSTRY
Integration and Optimization
by Jiří Klemeš, Ferenc Friedler, Igor Bulatov, and Petar Vrabčanov
2010 (March 2010) / Hardcover / 350 pages
ISBN: 9780071605540
(A Professional Reference Title)
This must-have text for process industry professionals describes and analyzes how to considerably improve the efficiency and sustainability of process industry practices. The book features process integration (PI) and optimization methodology, and presents ample industrial case studies for industry professionals to learn practical operational solutions.

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Ch 12. Typical Pitfalls and Recommendations on how to avoid them
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MAINTENANCE ENGINEERING HANDBOOK
Seventh Edition
by Lindsey R. Higgins, (deceased), Keith Mobley, Knoxville, TN, and Dar-\nrin J. Wikoff
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Section 10: Maintenance Welding
Section 11: Chemical Corrosion Control and Cleaning

PROJECT MANAGEMENT IN NEW PRODUCT\nDEVELOPMENT
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2008 (November 2007) / Hardcover / 397 pages
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Project Management in New Product Development shows how to\istranslate innovative ideas into new products and services—and get\nthem to market cheaper, faster, and better—using project management\ntools and techniques.

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SIX SIGMA STATISTICS WITH EXCEL AND\MINITAB
by Issa Bass
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Now with the help of this “one-stop” resource, operations and produc-\ntion managers can learn all the powerful statistical techniques for Six\nSigma operations, while becoming proficient at Excel and Minitab at\nthe same time. Six Sigma Statistics with Excel and Minitab offers a\ncomplete guide to Six Sigma statistical methods, plus expert cover-\nage of Excel and Minitab, two of today’s most popular programs for\nstatistical analysis and data visualization. Written by a seasoned\nSix Sigma Master Black Belt, the book explains how to create and\ninterpret dot plots, histograms, and box plots using Minitab...decide\non sampling strategies, sample size, and confidence intervals...ap-\nye hypothesis tests to compare variance, means, and proportions...\nconduct a regression and residual analysis...design and analyze an\nexperiment...and much more.

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VOICE OF THE CUSTOMER
by Kai Yang
2008 (October 2007) / Hardcover / 416 pages
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Voice of the Customer Capture and Analysis equips Six Sigma you
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International Edition

JURAN QUALITY CONTROL HANDBOOK
Fifth Edition
by J M Juran, and A Godfrey
1999 / 1,872 pages / Hardcover
ISBN: 9780070340039
ISBN: 9780071165396 [IE]
(International Edition is not for sale in Japan.)
(A Professional Reference Title)

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### MATERIALS ENGINEERING

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Materials Science (Introduction)

FOUNDATIONS OF MATERIALS SCIENCE AND ENGINEERING
Fifth Edition
William F. Smith, University Of Central Florida, and Javad Hashemi, Texas Tech University

2010 (April 2009) / Hardcover / 1056 pages
ISBN: 9780073529240 (with Student CD) - Out of Print

Smith/Hashemi’s Foundations of Materials Science and Engineering, 5/e provides an eminently readable and understandable overview of engineering materials for undergraduate students. This edition offers a fully revised chemistry chapter and a new chapter on biomaterials as well as a new taxonomy for homework problems that will help students and instructors gauge and set goals for student learning. Through concise explanations, numerous worked-out examples, a wealth of illustrations & photos, and a brand new set of online resources, the new edition provides the most student-friendly introduction to the science & engineering of materials.

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Second Edition
by James Schaffer, Lafayette College; Ashok Saxena, Georgia Institute of Technology; Stephen Antolovich, Washington State University; Thomas Sanders, Georgia Institute of Technology; Steven Warner, University of Massachusetts-Dartmouth
1999 / 848 pages
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Basic Metallurgy

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CORROSION ENGINEERING
Third Edition
by Mars Fontana, deceased
1986 / 512 pages
ISBN: 9780071003605 [IE]

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1986 / 800 pages
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Mechanical Behavior Of Materials

International Edition

STRUCTURES AND PROPERTIES OF ENGINEERING MATERIALS
Fifth Edition
by Daniel Henkel, and Alan Pense, Lehigh University
2001 / 464 pages / Hardcover
ISBN: 9780071201346 [IE]

www.mhhe.com/engcs/materials/henkel

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ADVANCED STRENGTH AND APPLIED STRESS ANALYSIS
Second Edition
by Richard Budynas, Rochester Institute of Technology
1999 / 720 pages
ISBN: 9780070089853
ISBN: 9780071160995 [IE]

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MECHANICAL METALLURGY
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1986 / 800 pages
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Thermodynamics Of Materials

SCHAUM'S OUTLINE OF THERMODYNAMICS FOR ENGINEERS
Second Edition
by Merle Potter, Michigan State University, and Craig Somerton, Ph.D, Michigan State University
2009 / Softcover / 400 pages
ISBN: 9780071611671

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MATERIALS ENGINEERING

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International Edition

PROPERTIES OF GAS AND LIQUIDS
Fifth Edition
by Bruce E. Poling, John M Prausnitz, University of California, Berkeley
and John O'Connell
2001 / 768 pages
ISBN: 9780070116825
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(A Professional Reference Title)

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Automotive Technology

International Edition

AUTOMOTIVE MECHANICS
Tenth Edition
by William H. Crouse and Donald L. Anglin
1993 / 832 pages
ISBN: 9780028009438 (Out-of-Print)
ISBN: 9780071125994 [IE]
(A Glencoe/McGraw-Hill Title)

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Automotive Engines
Automotive Engine Systems
Automotive Electrical and Electronic Equipment
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Engine Trouble Diagnosis and Tuneup
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Machine Tool Technology

International Edition

TECHNOLOGY OF MACHINE TOOLS
Seventh Edition
by Steve F. Kran, Berger Chair in Computing and Engineering, Tafts University, Arthur R. Giff, Member of the Society of Manufacturing Engineers, and Peter Smith, Consultant/Professor of Advanced Manufacturing in CNC, CAD/CAM
2011 (February 2010) / Hardcover / 928 pages
ISBN: 9780073510835
ISBN: 9780071221238 [IE]
(A Trade & Technical Title)

www.mhhe.com/kra7e

Technology of Machine Tools 7e provides state-of-the-art training for using machine tools in manufacturing technology, including up-to-date coverage of computer numerical control (CNC). It includes an overview of machine trades and career opportunities followed by theory and application. The text is structured to provide coverage of tools and measurement, machining tools and procedures, drilling and milling machines, computer-aided machining, and metallurgy. There is expanded coverage of computer-related technologies, including computer numerical control (CNC) and computer-aided design and manufacturing (CAD/CAM).

MACHINING & CNC TECHNOLOGY WITH STUDENT DVD, UPDATE EDITION
Second Edition
by Fitzpatrick Michael

2011 (January 2010) / Hardcover with CD-Rom
ISBN: 9780077388072
(A Trade & Technical Title)

www.mhhe.com/fitzpatrick

Machining and CNC Technology, by Michael Fitzpatrick, provides the most up-to-date approach to machine tool technology available, with its integrated coverage of manual and CNC-based equipment.

* Part 1 presents the basic modern integrated manufacturing.
* Part 2 shows students how to safely set up and run manually operated machines.
* Part 3 deals with the goal of transferring manual skills to the CNC system
* Part 4 covers advanced and advancing technologies, further emphasizing the contemporary outlook of Fitzpatrick's book.

FEATURES
- Fully integrated coverage of computer-related technologies in manufacturing, including the latest developments in CNC and CAD/CAM.
- Coverage of 21st century topics such as Statistical Process Control (SPC), Computer Coordinate Measuring Machines (CCMM), and the latest in cutting tool technologies.
- Motivational chapter features, such as Shop Talk, Trade Tips, and Key Points show students the practical side of the subject.

CONTENTS
Part I Introduction to Manufacturing
Section 1 Professionalism in Manufacturing
Section 2 Math Skills Self-Review
Section 3 Reading Technical Drawings
Section 4 Introduction to Geometrics
Section 5 Before and After Machining
Section 6 The Science and Skill of Measuring - Five Basic Tools
Section 7 Single-Purpose Measuring Tools, Gages, and Surface Roughness
Section 8 Layout Skills
Part II Introduction to Machining
Section 9 Cutting Tool Geometry
Section 10 Drilling and Operations and Machines
Section 11 Turning Operations
Section 12 Mills and Milling Operations
Section 13 Precision Grinding Operations and Machines
Section 14 Technical Screw Threads
Section 15 Metallurgy for Machinists - Heat Treating and Measuring Hardness
Section 16 Job Planning
Part III Introduction to Computer Numerical Control Machining
Section 17 Coordinates, Axes, and Motion
MANUFACTURING TECHNOLOGY

Metal Cutting & Machine Tools

Volume I

Second Edition

by P.N. Rao, Professor, Department of Industrial Technology, University of Northern Iowa

2008 / Softcover / 520 pages
ISBN: 9780070087699

[A McGraw-Hill India Title]

Meant for the second course on Manufacturing Technology i.e. Metal Cutting and Machine tools, the revision of this book has been done keeping in mind the requirements of students and teachers. Numerous new topics, solved and unsolved problems, multiple choice questions, have been added in the new edition. In all it is the most updated and comprehensive yet concise book on the subject.

CONTENTS

1. Introduction
2. Metal Cutting
3. Machine Tools
4. Centre Lathe
5. Special-Purpose Lathes
6. Reciprocating Machine Tools
7. Milling
8. Hole-Making Operations
9. Abrasive Processes
10. Other Machine Tools
11. Unconventional Machining Processes
12. Machine Tool Testing
13. Designing for Machining
14. Jigs and Fixtures
15. Metrology
WELDING: PRINCIPLES AND PRACTICES
Third Edition
by Robert Sacks
2005
ISBN: 9780077238773 (with Student Workbook)
(A Trade & Technical Title)
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Unit 1:
Chapter 1 History of Welding.
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Chapter 29 Reading Shop Drawings.
Chapter 30 Welding Symbols.
Chapter 31 Safety.
Chapter 32 Welding and Bonding of Plastics

MECHANICS FOR ENGINEERS: STATICS
Fifth Edition
by Ferdinand P. Beer (deceased), and E. Russell Johnston, Jr. University of Connecticut
2008 (August 2007) / Hardcover / 480 pages
ISBN: 9780072464788
The first book published in the Beer and Johnston Series, Mechanics for Engineers: Statics is a scalar-based introductory statics text, ideally suited for engineering technology programs, providing first-rate treatment of rigid bodies without vector mechanics. This new edition provides an extensive selection of new problems and end-of-chapter summaries. The text brings the careful presentation of content, unmatched levels of accuracy, and attention to detail that have made Beer and Johnston texts the standard for excellence in engineering mechanics education.

CONTENTS
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2 Statics of Particles
3 Statics of Rigid Bodies in Two Dimensions
4 Statics of Rigid Bodies in Three Dimensions
5 Distributed Forces: Centroids and Centers of Gravity
6 Analysis of Structures
7 Forces in Beams and Cables
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Chapter 6 Structural Analysis and Machines
Chapter 7 Centroids and Distributed Force Systems
Chapter 8 Internal Forces
Chapter 9 Friction
Chapter 10 Moments of Inertia
Continuing in the spirit of its successful previous editions, the ninth edition of Beer, Johnston, Mazurek, and Cornwell's Vector Mechanics for Engineers provides conceptually accurate and thorough coverage together with a significant refreshment of the exercise sets and online delivery of homework problems to your students. Nearly forty percent of the problems in the text are changed from the previous edition. The Beer/Johnston textbooks introduced significant pedagogical innovations into engineering mechanics teaching. The consistent, accurate problem-solving methodology gives your students the best opportunity to learn statics and dynamics. At the same time, the careful presentation of content, unmatched levels of accuracy, and attention to detail have made these texts the standard for excellence.

NEW TO THIS EDITION

- Thoroughly Refreshed Problem Set in the Ninth Edition. 40% of the problems are updated from the previous edition.
- Online Homework specific to the text is provided. Many problems are algorithmically-generated giving the instructor a wide array of problems for assignment to students.

CONTENTS

1 Introduction
2 Statics of Particles
3 Rigid Bodies: Equivalent Systems of Forces
4 Equilibrium of Rigid Bodies
5 Distributed Forces: Centroids and Centers of Gravity
6 Analysis of Structures
7 Forces in Beams and Cables
8 Friction
9 Distributed Forces: Moments of Inertia
10 Method of Virtual Work
11 Kinematics of Particles
12 Kinetics of Particles: Newton’s Second Law
13 Kinetics of Particles: Energy and Momentum Methods
14 Systems of Particles
15 Kinematics of Rigid Bodies
16 Plane Motion of Rigid Bodies: Forces and Accelerations
17 Plane Motion of Rigid Bodies: Energy and Momentum Methods
18 Kinetics of Rigid Bodies in Three Dimensions
19 Mechanical Vibrations
Appendix Fundamentals of Engineering Examination

Dynamics - Scalar

International Edition

MECHANICS FOR ENGINEERS: DYNAMICS

by Ferdinand P. Beer (deceased), and E. Russell Johnston, Jr.
University of Connecticut

2008 (November 2007) / Hardcover / 512 pages
ISBN: 9780072464771
ISBN: 9780071275361 (SI units)

The first book published in the Beer and Johnston Series, Mechanics for Engineers: Dynamics is a scalar-based introductory dynamics text, ideally suited for engineering technology programs, providing first-rate treatment of rigid bodies without vector mechanics. This new edition provides an extensive selection of new problems and end-of-chapter summaries. The text brings the careful presentation of content, unmatched levels of accuracy, and attention to detail that have made Beer and Johnston texts the standard for excellence in engineering mechanics education.

CONTENTS

11 Kinematics of Particles
12 Kinetics of Particles: Newton’s Second Law
13 Kinetics of Particles: Work and Energy
14 Kinetics of Particles: Impulse and Momentum
15 Kinematics of Rigid Bodies
16 Kinetics of Rigid Bodies: Forces and Accelerations
17 Kinetics of Rigid Bodies: Work and Energy
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Chapter 7 Newton-Euler Equations for Planar Rigid Body Motion
Chapter 8 Energy and Momentum Methods for Rigid Bodies
Chapter 9 Mechanical Vibrations
Chapter 10 Three-Dimensional Dynamics of Rigid Bodies
Appendix A Mass Moments of Inertia
Appendix B Angular Momentum: Advanced Topics

Plesha, Gray, and Costanzo’s Engineering Mechanics: Statics & Dynamics presents the fundamental concepts clearly, in a modern context using applications and pedagogical devices that connect with today’s students. The text features a five-part problem-solving methodology that is consistently used throughout all example problems. This methodology helps students lay out the steps necessary to correct problem-formulation and explains the steps needed to arrive at correct and realistic solutions. Once students have fully mastered the basic concepts, they are taught appropriate use of modern computational tools where applicable. Further reinforcing the text’s modern emphasis, the authors have brought engineering design considerations into selected problems where appropriate. This sensitizes students to the fact that engineering problems do not have a single answer and many different routes lead to a correct solution.

The first new mainstream text in engineering mechanics in nearly twenty years, Plesha, Gray, and Costanzo’s Engineering Mechanics: Statics & Dynamics will help your students learn this important material efficiently and effectively.

FEATURES

- 5-Part Problem Solving Methodology used in all example problems. A consistent problem-solving approach is used throughout. Each example problem is solved using a "template" that helps students effectively set up the problem and solve it correctly.
- Introduces Appropriate Use of Computational Tools. Fundamental concepts are taught thoroughly, and the use of computational tools is taught when appropriate.
- Appropriate Design Coverage. The authors have brought engineering design considerations into selected problems where applicable. This will sensitize students to the fact that engineering problems do not have a single answer and many different routes lead to a correct solution.
- Real World Examples, Problems, Applications, Photographs. All the photographs, applications, examples are from the real world, so that students will be able to identify circumstances that they encounter in their daily lives.
- Online Homework features selected problems from the text and algorithmically-generated problems that give the instructor a wide array of homework assignment options.

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Chapter 1 Setting the Stage for the Study of Dynamics
that students will be able to identify circumstances that they encounter in their daily lives.

- Online Homework features selected problems from the text and algorithmically-generated problems that give the instructor a wide array of homework assignment options.

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- Appendix A Some Useful Definitions and Properties of Vector Algebra
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- Appendix C Fundamentals of Engineering Examination

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Website: www.mheducation.asia
Noted for its highly readable style, the new edition of this bestseller provides an updated overview of aeronautical and aerospace engineering. Introduction to Flight blends history and biography with discussion of engineering concepts, and shows the development of flight through this perspective. Anderson covers new developments in flight, including unmanned aerial vehicles, uninhabited combat aerial vehicles, and applications of CFD in aircraft design. Many new and revised problems have been added in this edition. Chapter learning features help readers follow the text discussion while highlighting key engineering and industry applications.

CONTENTS
Chapter 1: The First Aeronautical Engineers
Chapter 2: Fundamental Thoughts
Chapter 3: The Standard Atmosphere
Chapter 4: Basic Aerodynamics
Chapter 5: Airfoils, Wings, and Other Aerodynamics Shapes
Chapter 6: Elements of Airplane Performance
Chapter 7: Principles of Stability and Control
Chapter 8: Space Flight (Astronautics)
Chapter 9: Propulsion
Chapter 10: Flight Vehicle Structures and Materials
Chapter 11: Hypersonic Vehicles
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Appendix B Standard Atmosphere, English Engineering Units
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Dynamics (Intermediate)

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Chapter 1: Introduction.
Chapter 2: Basic Principles.
Chapter 3: Relative Motion.
Chapter 4: Dynamics of a System of Particles.
Chapter 7: Rigid-Body Geometry
Chapter 8: Rigid Body Kinematics
Chapter 9: Rigid Body Dynamics: Basic Concepts.
Chapter 11: Qualitative Analysis of Rigid Body Motion.
Chapter 12: Dynamics of Lightly Flexible Bodies.
Appendices:
Chapter B: Concepts from the Calculus of Variations.
Chapter C: Common Mass Moments of Inertia.
Dynamic Systems

NEW

SYSTEM DYNAMICS
Second Edition
by William J. Palm III

2010 (January 2009) / Hardcover / 944 pages
ISBN: 9780073529271
ISBN: 9780071267793 [IE]

www.mhhe.com/palm

System Dynamics includes the strongest treatment of computational software and system simulation of any available text, with its early introduction of MATLAB® and Simulink®. The text's extensive coverage also includes discussion of the root locus and frequency response plots, among other methods for assessing system behavior in the time and frequency domains as well as topics such as function discovery, parameter estimation, and system identification techniques, motor performance evaluation, and system dynamics in everyday life.

NEW TO THIS EDITION

- The author has edited two chapters for a more concise presentation of the review on dynamics (Ch. 2) and a more concise introduction to electrical systems (Ch. 6).
- Block diagrams, formerly in Chapter 5, are now presented in Chapter 9 to be closer to their applications in control system analysis. The material in Chapter 5 dealing with transfer functions and state variable methods has been reorganized to better delineate the advantages of each method.
- Introduction to MATLAB®, offered on the text website, provides readers with a practical, concise guide to the program.
- The former Chapter 11 has been split into two chapters to focus more concisely on PID control system design issues (new Chapter 11) and compensator design (new Chapter 12).

CONTENTS
1 Introduction
2 Modeling of Rigid-Body Mechanical Systems
3 Solution Methods for Dynamic Models
4 Spring and Damper Elements in Mechanical Systems
5 State Variable Models
6 Electrical and Electromechanical Systems
7 Fluid and Thermal Systems
8 Frequency Response Methods
9 Transient Response and Block Diagram Methods
10 Introduction to Feedback Control
11 PID Control System Design
12 Compensator Design
13 Vibration Applications
Appendices
Introduction to MATLAB (on the website)
Guide to Selected MATLAB Commands and Functions
Numerical Methods (on the website)
Fourier Series.

Static and Dynamics

NEW

ENGINEERING MECHANICS: STATICS AND DYNAMICS
by Michael Plesha, University of Wisconsin --- Madison, Gary Gray
Penn State Univ-Univ Park, and Francesco Costanzo, Penn State Univ-Univ Park

2010 (March 2009) / Hardcover / 1376 pages
ISBN: 9780077302009

http://www.mhhe.com/pgc

Plesha, Gray, and Costanzo's Engineering Mechanics: Statics & Dynamics presents the fundamental concepts clearly, in a modern context using applications and pedagogical devices that connect with today's students. The text features a five-part problem-solving methodology that is consistently used throughout all example problems. This methodology helps students lay out the steps necessary to correct problem formulation and explains the steps needed to arrive at correct and realistic solutions. Once students have fully mastered the basic concepts, they are taught appropriate use of modern computational tools where applicable. Further reinforcing the text's modern emphasis, the authors have brought engineering design considerations into selected problems where appropriate. This sensitizes students to the fact that engineering problems do not have a single answer and many different routes lead to a correct solution.

The first new mainstream text in engineering mechanics in nearly twenty years, Plesha, Gray, and Costanzo's Engineering Mechanics: Statics and Dynamics will help your students learn this important material efficiently and effectively.

FEATURES

- 5-Part Problem Solving Methodology used in all example problems. A consistent problem-solving approach is used throughout. Each example problem is solved using a "template" that helps students effectively set up the problem and solve it correctly.
- Introduces Appropriate Use of Computational Tools. Fundamental concepts are taught thoroughly, and the use of computational tools is taught when appropriate.
- Appropriate Design Coverage. The authors have brought engineering design considerations into selected problems where applicable. This will sensitize students to the fact that engineering problems do not have a single answer and many different routes lead to a correct solution.
- Real World Examples, Problems, Applications, Photographs. All the photographs, applications, examples are from the real world, so that students will be able to identify circumstances that they encounter in their daily lives.
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Appendix B Differential Equations and Mathematical Software
Appendix C Intrinsic Description of Motion
Appendix D Rotation Matrices and Angular Velocities
Appendix E Moments and Products of Inertia
MECHANICAL ENGINEERING

Thermal Fluid Sciences

ENGINEERING MECHANICS: STATICS AND DYNAMICS
by Nelson A. formerly with Dept of Mechanical Engineering, Aurora Engineering College, Andhra Pradesh

2009 (June 2009) / 860 pages
ISBN: 9780070146143
(McGraw-Hill India Title)
www.mhce.com/nelsoniem

Meant for the first year students of all engineering disciplines, this book on Engineering Mechanics covers statics and dynamics using the vector approach. It covers 100% syllabi of all major universities. In-depth explanations, varied solved examples with 3-dimensional diagrams make this a complete offering on the subject.

FEATURES
- In SI Units
- Follows the Vector Approach
- Excellent span of coverage: 100% syllabi coverage.
- Excellent depth of coverage: Detailed explanations supported with apt diagrammatic representations in a very organized manner render good understanding of the subject.
- Diagrams: Illustrious 3D diagrams help in clear understanding of the topics

Pedagogy:
- Solved Examples: 450
- Practice problems: 560
- Objective type Questions: 140

A total of 1150 problems present in the book

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1. Introduction
2. Vector Algebra
3. System of Forces and Resultant-I (Concurrent Forces)
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19. Vibrations

INTRODUCTION TO THERMODYNAMICS AND HEAT TRANSFER WITH EES SOFTWARE
Second Edition
by Yunus A Cengel, University of Nevada-Reno
2008 (September 2007)
ISBN: 9780077235659
www.mhhe.com/cengel

Introduction to Thermodynamics and Heat Transfer provides balanced coverage of the basic concepts of thermodynamics and heat transfer. Together with the clear and numerous illustrations, student-friendly writing style, and manageable math, this is an ideal text for an introductory thermodynamic course for non-mechanical engineering majors. Continuing in the tradition of Cengel/Boles: Thermodynamics, this lavishly illustrated text presents the key topics in thermodynamics and heat transfer, in a highly accessible student-friendly fashion. The flexibly organized text can accommodate courses that spend anywhere from 1/3rd to 2/3rds or more of class time on thermodynamics and the rest on key heat transfer topics. The intuitive approach is supported by a wealth of physical explanations and analogies that draw parallels between the subject and the students’ everyday experiences. Many of the 150 thoroughly worked out examples and almost 2,000 real-world problems, highlight applications from civil and electrical engineering. Over 1,000 illustrations help students visualize concepts. This approach and contents make this text an ideal resource for introduction to thermodynamics and/or thermal science courses intended for non-mechanical engineering majors.

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Chapter 14: Natural Convection
Chapter 15: Radiation Heat Transfer
Chapter 16: Heat Exchangers
Chapter 17: Cooling of Electronic Equipment
Appendix 1 Property Tables and Charts (SI Units)
Appendix 2 Property Tables and Charts (English Units)
The best-selling Fundamentals of Thermal-Fluid Sciences is designed for the non-mechanical engineering student who needs exposure to key concepts in the thermal sciences in order to pass the Fundamentals of Engineering (FE) Exam. This lavishly illustrated text provides a highly intuitive and practical understanding of the material by emphasizing the physics and the underlying physical phenomena involved. Using a reader-friendly approach and a conversational writing style, the book is self-instructive and entertains while it teaches. It shows that highly technical matter can be communicated effectively using simple yet precise language. The text is made up of Thermodynamics, Heat Transfer and Fluids. The laws that govern these three subjects are all the same. Like all the other Cengel texts, it uses a similar pedagogical approach, by using familiar everyday examples.

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SOFTWARE
Second Edition
by Yunus A. Cengel, University of Nevada-Reno
2008 (September 2007)
ISBN: 9780077235659
www.mhhe.com/cengel

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Chapter 17: Cooling of Electronic Equipment
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Thermal Systems Design

International Edition

DESIGN AND SIMULATION OF THERMAL SYSTEMS

Contents
Introduction to Thermal System Design.
The Design Process.
Ethical Considerations.
Thermodynamics Review.
Fluid Mechanics Review.
Heat Transfer Review.
System Components.
Case Studies-I.
Case Studies-II.
Data Analysis. Economic Considerations.
Preparing Technical Reports A- Property Tables A Using EES
The seventh edition of White’s Fluid Mechanics offers students a clear and comprehensive presentation of the material that demonstrates the progression from physical concepts to engineering applications and helps students quickly see the practical importance of fluid mechanics fundamentals. The wide variety of topics gives instructors many options for their course and is a useful resource to students long after graduation.

The book’s unique problem-solving approach is presented at the start of the book and carefully integrated in all examples. Students can progress from general ones to those involving design, multiple steps and computer usage.

NEW TO THIS EDITION

- Bernoulli presentation was revised and moved to partner with linear momentum.
- New material on microflow concepts have been added.
- Over 200 new problems have been added throughout the text.
- Stimulating new contemporary examples, such as a flying car, kite-driven ships, a vehicle driven by a wind turbine, the Trans-Alaska Pipeline, and Rocket Man’s wings.
- Each group of problem assignments has a subheading explaining the topic.

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Chapter 2: Pressure Distribution in a Fluid
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Chapter 7: Flow Past Immersed Bodies
Chapter 8: Potential Flow and Computational Fluid Dynamics
Chapter 9: Compressible Flow
Chapter 10: Open-Channel Flow
Chapter 11: Turbomachinery

Fluid Mechanics: Fundamentals and Applications, communicates directly with tomorrow’s engineers in a simple yet precise manner. The text covers the basic principles and equations of fluid mechanics in the context of numerous and diverse real-world engineering examples. The text helps students develop an intuitive understanding of fluid mechanics by emphasizing the physics, using figures, numerous photographs and visual aids to reinforce the physics.

NEW TO THIS EDITION

- 20% New homework problems.

FEATURES

- Four-Pronged Visual Approach: A four-pronged visual approach is incorporated into this fluids text and package. 1. There is an abundance of figures and diagrams incorporated in the text. 2. There is an abundance of photos, including images from Van Dyke’s Album of fluid motion. 3. Fluid concept videos created by Gary Settles of Pennsylvania State University. 4. Numerous CFD animations for key fluid concepts.
- Intuitive Explanations used throughout, featuring everyday phenomena to show basic principles behind fluid mechanics.
- EES Problems included throughout the book, and marked with an EES icon; these are problems that are appropriate for computer solution, and set up to solved with the software package. The Student Resources CD ROM will carry scripted EES problem code and the “run-time” version of EES that readers can use to solve the problems, though it will not save or print. Full EES engine will be available to adopters to download; it will be renewed once a year (summer) with a new password.
- Design-Oriented Problems--each chapter problem set will include several problems that are open-ended, and require students to think beyond just getting a simple, numerical answer to the problem.
- Applied Problems will show fluid mechanics use in a number of disciplines, including ME, Civil, Environmental, Biomedical and Aerospace Engineering.
- FE Exam Questions will be included in the problem sets, and identified.
- Choice of SI alone or SI/English units. In recognition of the fact that English units are still widely used in some industries, both SI and English units are used in this text, with an emphasis on SI. Problems, tables, and charts in English units are designated by “E” after the number for easy recognition, and they can be ignored easily by SI users.
FUNDAMENTALS OF THERMAL-FLUID SCIENCES
Third Edition
by Yunus A. Cengel, University Of Nevada-Reno, and Robert H. Turner, University Of Nevada-Reno
2008 (July 2007) / Hardcover / 1152 pages
ISBN: 9780073327488 (with Student Resources DVD)
www.mhhe.com/cengel
The best-selling Fundamentals of Thermal-Fluid Sciences is designed for the non-mechanical engineering student who needs exposure to key concepts in the thermal sciences in order to pass the Fundamentals of Engineering (FE) Exam. This lavishly illustrated text provides a highly intuitive and practical understanding of the material by emphasizing the physics and the underlying physical phenomena involved. Using a reader-friendly approach and a conversational writing style, the book is self-instructive and entertains while it teaches. It shows that highly technical matter can be communicated effectively using simple yet precise language. The text is made up of Thermodynamics, Heat Transfer and Fluids. The laws that govern these three subjects are all the same. Like all the other Cengel texts, it uses a similar pedagogical approach, by using familiar everyday examples.

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5 Bernoulli and Energy Equations
6 Momentum and Analysis of Flow Systems
7 Dimensional Analysis and Flow Systems
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International Edition

ESSENTIALS OF FLUID MECHANICS
Fundamentals and Applications
by John M. Cimbala, Pennsylvania State University-University Park, and Yunus A. Cengel, University Of Nevada-Reno
2008 (September 2006) / Hardcover
ISBN: 9780073301129 (with Student Resources DVD)
ISBN: 9780071260305 [IE, with Student Resource DVD]
www.mhhe.com/cimbala
Essentials of Fluid Mechanics: Fundamentals and Applications is an abridged version of a more comprehensive text by the same authors, Fluid Mechanics: Fundamentals and Applications (McGraw-Hill 2006). Suitable for a one-semester course, this text communicates directly with tomorrow's engineers in a simple yet precise manner. It covers the basic principles and equations of fluids in the context of numerous, diverse real-world engineering examples, and it helps students develop an intuitive understanding of fluid mechanics by emphasizing the physics. An abundance of figures, photographs and supplemental visual aids spark curiosity and reinforce the physics.

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2 Properties of Fluids
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4 Fluid Kinematics
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6 Momentum Analysis of Flow Systems
7 Dimensional Analysis and Modeling
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9 Differential Analysis of Fluid Flow
10 External Flow: Drag and Lift
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12 Turbomachinery
Whites Fluid Mechanics sixth edition will continue the text’s tradition of excellent problems of different types, precision and accuracy, and good application of concepts to engineering. The new 6th edition will feature the best general problem-solving approach to date, presented at the start of the book and carefully integrated in all examples. Students can progress from general ones to those involving design, multiple steps and computer usage. Word problems are included to build readers' conceptual understanding of the subject, and FE Exam problems (in multiple-choice format) are included. EES (Engineering Equation Solver) software is included so that students can effectively use the computer to model, solve and modify typical fluid mechanics problems. A DVD containing EES is free with every book, and Appendix E describes its use and application to fluid mechanics. A limited version of EES, that does not expire, is included on the CD ROM; users of the book can also download and distribute the full Academic Version of EES, which is renewed annually with a new username and password. Also an animation library will be included as will an unlimited amount of problems, due to ARIS.

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Answers to Selected Problems
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INTRODUCTION TO FLUID MECHANICS AND FLUID MACHINES
Second Edition
by S. K. Som, Professor
2007 / Softcover / 740 pages
ISBN: 9780070667624
(McGraw-Hill India Title)

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1. Introduction and Fundamental Concepts
2. Fluid Statics
3. Kinematics of Fluid
4. Conservation Equations and Analysis of Finite Control Volumes
5. Applications of Equations of Motion and Mechanical Energy
6. Principles of Physical Similarity and Dimensional Analysis
7. Flow of Ideal Fluids
8. Viscous Incompressible Flows
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11. Applications of Viscous Flows Through Pipes
12. Flows with a Free Surface
13. Applications of Unsteady Flows
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15. Principles of Fluid Machines
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SCHAUM'S OUTLINE OF FLUID MECHANICS AND HYDRAULICS
Third Edition
by Ronald J. White, Drexel Institute of Technology; Jack B. Evett, UNCC; Cheng Liu, UNCC
2009 / 408 pages
ISBN: 9780071611640
(A Schaum's Publication)

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1. Properties of Fluids
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Third Edition
by William F. Hughes, Ph.D., Carnegie Institute of Technology, John A. Brighten, Ph.D., Pennsylvania State University, and Nicholas Winovich, Ph.D., University of Tennessee, Knoxville
1999 / Softcover / 369 pages
ISBN: 9780070311183
(A Schaum's Publication)

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Appendix F: Vector Identities
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SCHAUM'S OUTLINE OF FLUID MECHANICS
by Merle Potter, Michigan State University, and David C. Wigger
2008 / Softcover / 248 pages
ISBN: 9760071487818
(A Schaum's Publication)

Millions of students trust Schaum's Outlines to help them succeed in the classroom and on exams. Schaum's is the key to faster learning and higher grades in every subject. Each Outline presents all the essential course information in an easy-to-follow, topic-by-topic format. You also get hundreds of examples, solved problems, and practice exercises to test your skills.

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### Computational Fluid Dynamics

**International Edition**

**COMPUTATIONAL FLUID DYNAMICS**

by John Anderson, University of Maryland

1995 / 547 pages

ISBN: 9780070016859

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2. The Governing Equations of Fluid Dynamics: Their Derivation, Their Physical Meaning, and a Presentation of Forms Particularly Suitable to CFD

**Part II: Basics of the Numerics**

4. Basic Aspects of Discretization
5. Grids With Appropriate Transformations
6. Some Simple CFD Techniques: A Beginning

**Part III: Some Applications**

7. Numerical Solutions of Quasi-One-Dimensional Nozzle Flows
10. Supersonic Flow Over a Flat Plate: Numerical Solution by Solving the Complete Navier-Stokes Equations

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### Control Systems

**CONTROL SYSTEMS: Principles and Design**

Third Edition

by M Gopal, Indian Institute of Technology (IIT, Delhi)

2008 / Softcover / 752 pages

ISBN: 9780070668799

http://highered.mcgraw-hill.com/sites/0070668795

The third edition of Control Systems: Principles and Design provides a unified treatment of continuous-time and discrete-time systems for two courses at the undergraduate level. The text continues to emphasize on frequency-domain design methods augmented with state variable methods for control systems analysis.

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2. Dynamic Models and Dynamic Response
3. Model of Industrial Control Devices and Systems
4. Basic Principles of Feedback Control
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6. The Performance of Feedback Systems
7. Compensator Designing Using Root Locus Plots
8. The Nyquist Stability Criterion and Stability Margin
9. Feedback Systems Performance Based on the Frequency Response
10. Compensator Design using Bode Plots
11. Digital Control Systems
12. Control System Analysis using State Variable Methods
13. Control Systems Design using State Variable Methods
14. Nonlinear systems

### Schaum's Outline of Fluid Dynamics

Third Edition

by William F. Hughes, Ph.D., Carnegie Institute of Technology, John A. Brighton, Ph.D., Pennsylvania State University, and Nicholas Winowich, Ph.D., University of Tennessee, Knoxville

1999 / Softcover / 368 pages

ISBN: 9780070311183

(A Schaum's Publication)

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SCHAUM'S OUTLINE OF FEEDBACK AND CONTROL SYSTEMS
Second Edition
by Joseph DiStefano, University of California, Los Angeles; Allen Stubbe
rald, UCLA; Ivan William, TRW Space and Technology
1990 / 572 pages
ISBN: 9780070170520
(A Schaum’s Publication)

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Transfer Functions
Block Diagram Algebra and Transfer Functions of Systems
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Analysis and Design of Feedback Control Systems: Objectives and Methods
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Nyquist Design
Root-Locus Design
Bode Analysis
Bode Design
Nichols Chart Analysis
Nichols Chart Design
Introduction to Nonlinear Control Systems
Introduction to Advanced Topics in Control Systems Analysis and Design

Strength of Materials/Mechanics of Materials

STATICS AND MECHANICS OF MATERIALS
By Ferdinand P Beer (deceased), E Russell Johnston & John T DeWolff of University of Con
necticut and David Mazurek, US Coast Guard Academy

2011 (January 2010) / Hardcover / 800 pages
ISBN: 9780073380155
www.mhhe.com/beerjohnston

The approach of the Beer and Johnston texts has been utilized by hundreds of thousands of students over decades of engineering edu-
cation. The Statics and Mechanics of Materials text uses this proven methodology in a new book aimed at programs that teach these two
subjects together or as a two-semester sequence.

Maintaining the proven methodology and pedagogy of their other
textbooks, Beer and Johnston’s Statics and Mechanics of Materials
combines the theory and application behind these two subjects into
one cohesive text. A wealth of problems, Beer and Johnston’s hallmark
Sample Problems, and valuable Review and Summary sections at the
end of each chapter highlight the key pedagogy of the text.

FEATURES
✓ Review and Summary Sections at the end of each chapter
provide students with a valuable study tool. Reviewers found these
chapter reviews to be one of the strongest features of the text and
the best available in the market.

✓ A careful, step-by-step presentation is followed in each lesson
of each chapter; every chapter is organized as follows: a chapter
introduction with a chapter outline previewing what will be covered in
each lesson. After each lesson there are 1-4 Sample Problems (set
up to serve as a model for student solutions) followed by the lesson’s
problem set. At the end of each chapter students find a Review
and Summary section with notes for review and examples and cross
references to key sections. The chapter concludes with a Review
Problem section that ties together several concepts from that chapter.

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Chapter 8: Concepts of Stress
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Answers to Problems

International Edition

MECHANICS OF MATERIALS
Fifth Edition
By Ferdinand P Beer (deceased), E Russell Johnston & John T DeWolf of University of Connecticut and David Mazurek, US Coast Guard Academy
2009 (June 2008) / Hardcover / 816 pages
ISBN: 9780077221409
http://www.mhhe.com/beerjohnston

At McGraw-Hill, we believe Beer and Johnston's Mechanics of Materials is the uncontested leader for the teaching of solid mechanics. Used by thousands of students around the globe since it's publication in 1981, Mechanics of Materials, provides a precise presentation of the subject illustrated with numerous engineering examples that students both understand and relate to theory and application.

The tried and true methodology for presenting material gives your student the best opportunity to succeed in this course. From the detailed examples, to the homework problems, to the carefully developed solutions manual, you and your students can be confident the material is clearly explained and accurately represented.

If you want the best book for your students, we feel Beer, Johnston's Mechanics of Materials, 5th edition is your only choice.

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2. Stress And Strain--axial Loading
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4. Pure Bending
5. Analysis And Design Of Beams For Bending
6. Shearing Stresses In Beams And Thin-walled Members
7. Transformation Of Stress And Strain
8. Principal Stresses Under Given Loading Conditions
9. Deflection Of Beams
10. Columns
11. Energy Methods

ADVANCED MECHANICS OF SOLIDS
Third Edition
By L. S. Srinath, Indian Institute of Technology, Madras
2008 / Softcover / 524 pages
ISBN: 9780070139886 (McGraw-Hill India Title)
http://www.mhhe.com/srinath/ams3e

The comprehensive text on "Mechanics of Solids" Provides a firm understanding of the subject as the next step after an introductory course on Strength of Materials. In-depth treatment of stress and strain analysis, applications of various strain energy theorems, thermal stresses, composites, and stress concentration make this book unique.

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1. Analysis of Stress
2. Analysis of Strain
3. Stress-Strain Relations for Linearly Elastic Solids
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STRENGTH OF MATERIALS (SIGMA SERIES)
By L. S. Negi, Gurunanak Dev Polytechnic, Rohini, Delhi
2007 / Softcover / 336 pages
ISBN: 9780070634596 [SI Units]

Based on the problems and solutions approach, this book on strength of Materials presents the fundamentals and concepts in a simple manner with step-by-step solution of varied examples. The large number of practice problems will facilitate honing of the problem solving skills.

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14. Thick Walled Cylinder
15. Plastic Theory of Structures
MECHANICAL ENGINEERING

International Edition

THE SCIENCE AND DESIGN OF ENGINEERING MATERIALS WITH MATERIALS IN FOCUS CD-ROM
Second Edition
by James Schaffer, Lafayette College; Ashok Saxena, Georgia Institute of Technology; Stephen Antolovich, Washington State University; Thomas Sanders, Georgia Institute of Technology; Steven Warrner, University of Massachusetts-Dartmouth
1999 / 848 pages
ISBN: 9780072448092 (with CD-ROM/E-Text) - Out-of-Print
www.mhhe.com/engsc/materials/schaffer

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International Edition

MECHANICS OF MATERIALS
by Ansel Ugural, New Jersey Institute of Technology
1991 / 441 pages
ISBN: 9780071009737 [IE]

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11 Strain Energy for a General State of Stress
12 Inelastic Behavior
13 Buckling of Columns
Appendices
A Moments of Areas
B Tables
C How to Use the Interactive Software

SCHAUM'S OUTLINE OF STRENGTH OF MATERIALS
Fourth Edition
by William Nash, University of Massachusetts
1998 / 432 pages
ISBN: 9780070466173
(A Schaum's Publication)

CONTENTS
Chapter 1: Tension and Compression
Chapter 2: Statically Indeterminate Force Systems Tension and Compression
Chapter 3: Thin-Walled Pressure Vessels
Chapter 4: Direct Shear Stresses
Chapter 5: Torsion
Chapter 6: Shearing Force and Bending Moment
Chapter 7: Centroids, Moments of Inertia, and Products of Inertia of Plane Areas
Chapter 8: Stresses in Beams
Chapter 9: Elastic Deflection of Beams: Double-Integration Method
Chapter 10: Elastic Deflection of Beams: Method of Singularity Functions
Chapter 11: Statically Indeterminate Elastic Beams
Chapter 12: Special Topics in Elastic Beam Theory
Chapter 13: Plastic Deformations of Beams
Chapter 14: Columns. Strain Energy Methods
Chapter 15: Combined Stresses
Chapter 16: Members Subject to Combined Loadings: Theories of Failure
The approach of the Beer and Johnston texts has been utilized by hundreds of thousands of students over decades of engineering education. The Statics and Mechanics of Materials text uses this proven methodology in a new book aimed at programs that teach these two subjects together or as a two-semester sequence.

Maintaining the proven methodology and pedagogy of their other textbooks, Beer and Johnston's Statics and Mechanics of Materials combines the theory and application behind these two subjects into one cohesive text. A wealth of problems, Beer and Johnston's hallmark Sample Problems, and valuable Review and Summary sections at the end of each chapter highlight the key pedagogy of the text.

- Review and Summary Sections at the end of each chapter provide students with a valuable study tool. Reviewers found these chapter reviews to be one of the strongest features of the text and the best available in the market.

- A careful, step-by-step presentation is followed in each lesson of each chapter; every chapter is organized as follows: a chapter introduction with a chapter outline previewing what will be covered in each lesson. After each lesson there are 1-4 Sample Problems (set up to serve as a model for student solutions) followed by the lesson’s problem set. At the end of each chapter students find a Review and Summary section with notes for review and examples and cross references to key sections. The chapter concludes with a Review Problem section that ties together several concepts from that chapter.

CONTENTS
Chapter 1: Introduction
Chapter 2: Statics of Particles
Chapter 3: Rigid Bodies: Equivalent Systems of Forces
Chapter 4: Equilibrium of Rigid Bodies
Chapter 5: Distributed Forces: Centroids and Centers of Gravity
Chapter 6: Analysis of Structures
Chapter 7: Distributed Forces: Moments of Inertia
Chapter 8: Concepts of Stress
Chapter 9: Stress and Strain: Axial Loading
Chapter 10: Torsion
Chapter 11: Pure Bending
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A: Typical Properties of Selected Materials Used in Engineering
B: Properties of Rolled-Steel Shapes
C: Beam Deflections and Slopes
Photo Credits
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Answers to Problems

International Edition

STATICS AND STRENGTH OF MATERIALS
Second Edition
by Fa-Hua Cheng
1997 / 816 pages
ISBN: 9780028030678
ISBN: 9780071156660 [IE]
(Glencoe/McGraw-Hill Title)
CONTENTS
Fundamental Concepts and Principles
Resultant of Coplanar Force Systems
Equilibrium of Coplanar Force Systems
Analysis of Structures
Friction
Concurrent Spatial Force Systems
Center of Gravity and Centroids
Area Moments of Inertia
Simple Stresses
Strains
Mechanical Properties of Materials
Torsion of Circular Shafts
Shear Forces and Bending Moments in Beams
Stresses in Beams
Design of Beams for Strength
Deflections of Beams
Statically Indeterminate Beams
Combined Stresses
Columns
Connections
MECHANICAL ENGINEERING

Stress Analysis

International Edition

ADVANCED STRENGTH AND APPLIED STRESS ANALYSIS
Second Edition
by Richard Budynas, Rochester Institute of Technology
1999 / Hardcover / 720 pages
ISBN: 9780070080883
ISBN: 9780071160995 [IE]

CONTENTS
Chapter 1: Basic Concepts of Force, Stress, Strain, and Displacement
Chapter 2: Stress and Strain; Transformations, Equilibrium, and Compatibility
Chapter 3: Fundamental Formulations of Stress, Strain, and Deflection
Chapter 4: Concepts from the Theory of Elasticity
Chapter 5: Topics from Advanced Mechanics of Materials
Chapter 6: Energy Techniques in Stress Analysis
Chapter 7: Introduction to the Finite Element Method
Chapter 10: Finite Element Modeling Techniques
Appendix A: SI and USCU Conversions
Appendix B: Properties of Cross Sections
Appendix C: Beams in Bending
Appendix D: Singularity Functions
Appendix E: Principal Second-area Moments
Appendix F: Stress Concentration Factors
Appendix G: Strain Gage Rosette Equations
Appendix H: Corrections for Transverse Sensitivity of Strain
Appendix I: Matrix Algebra and Cartesian Tensors.

Plates & Shells

International Edition

THEORY OF PLATES AND SHELLS
Second Edition
by Stephen Timoshenko, deceased; Krieger Woinowsky, Stanford University
1959 / 580 pages
ISBN: 9780070858206 [IE]

CONTENTS
1 Bending of Long Rectangular Plates to a Cylindrical Surface
2 Pure Bending of Plates
3 Symmetrical Bending of Circular Plates
4 Small Deflections of Laterally Loaded Plates
5 Simply Supported Rectangular Plates
6 Rectangular Plates with Various Edge Conditions
7 Coniuous Rectangular Plates
8 Plates on Elastic Foundations
9 Plates of Various Shapes
10 Special And Approximate Methods in Theory of Plates
11 Bending of Anisotropic Plates
12 Bending of Plates Under the Combined Action of Lateral Loads and Forces in the Middle Plane of the Plate
13 Large Deflections of Plates
14 Deformation of Shells without Bending
15 General Theory of Cylindrical Shells
16 Shells Having the Form of a Surface of Revolution and Loaded Symmetrically with Respect to their Axis

SCHAUM'S OUTLINE OF STATICS AND STRENGTH OF MATERIALS
by John Jackson, Vermont Technical College; Harold Wirtz, Vermont Technical College
1983 / 416 pages
ISBN: 9780070321212
(A Schaum's Publication)

CONTENTS
Foundations
Basic Principles of Statics and Strength of Materials
Nonconcurrent Coplanar Force Systems
Concurrent Coplanar Force Systems
Concurrent Noncoplanar Force Systems
Friction
Miscellaneous Problems
Stress and Deformation
Bolted, Welded, and Riveted Connections
Torsion, Shafts, Shaft Couplings, and Keys
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Beams, Shear Forces, and Bending Moments
Stresses and Deflections in Beams
Beam Design
Combined Stresses
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Energy Conversion

SOLAR ENERGY
Principles of Thermal Collection and Storage
Third Edition
by Nayeel Sukhatme
2008 / Softcover / 452 pages
ISBN: 9780070260641
(McGraw-Hill India Title)
http://www.mhhe.com/sukhatme/se3e

The revision of this text hallmark text on Solar Energy has been done keeping in mind the current scenario in Solar Energy requirements. As a result the book is updated with the energy scenario and the various applications of solar energy being used today. Numerous new topics comparison tables solved and unsolved problems, have been added and changes have been made to cater to the changing requirements of the students. In all it is the most updated and comprehensive yet concise book on the subject.

CONTENTS
1. Introduction
2. The Solar Energy Option—An Overview of Thermal Applications
3. Solar Radiation
4. Liquid Flat-Plate Collectors
5. Solar Air Heaters
6. Concentrating Collectors
7. Thermal Energy Storage
8. Solar Pond
9. Economic Analysis
10. Other Methods for Solar Energy Utilization

Heat Transfer
(Introduction)

HEAT AND MASS TRANSFER
A Practical Approach
Fourth Edition
by Yunus A. Cengel, University Of Nevada-Reno, and Afshin J. Ghajar,
Oklahoma State University-Stillwater
2011 (January 2010) / Hardcover
ISBN: 9780077366643 (with EES DVD)
www.mhhe.com/cengel

With complete coverage of the basic principles of heat transfer and a broad range of applications in a flexible format, Heat and Mass Transfer: A Practical Approach by Yunus Cengel and Afshin Ghajar provides the perfect blend of fundamentals and applications. The text provides a highly intuitive and practical understanding of the material by emphasizing the physics and the underlying physical phenomena involved.

This text covers the standard topics of heat transfer with an emphasis on physics and real-world every day applications, while de-emphasizing the intimidating heavy mathematical aspects. This approach is designed to take advantage of students’ intuition, making the learning process easier and more engaging. Key: 50% of the Homework Problems including design, computer, essay, lab-type, and FE problems are new or revised to this edition. Using a reader-friendly approach and a conversational writing style, the book is self-instructive and entertains while it teaches. It shows that highly technical matter can be communicated effectively in a simple yet precise language.

NEW TO THIS EDITION
❖ 50% of the problems are new or revised to this edition.

FEATURES
❖ More than 1000 illustrations. This text has a sensational visual appeal that highlight its key learning features.
❖ Approximately 2,000 Homework Problems including design, computer, essay, and lab-type problems are included. FE (Fundamentals of Engineering) Problems have also been added to the third edition.
❖ The text and its solutions manual have been carefully checked for accuracy.
❖ A list of chapter objectives at the beginning of each chapter.
❖ EES (Engineering Equation Solver) DVD packaged free with text. EES is a powerful equation solver with built-in functions and property tables for thermodynamics and transport properties as well as automatic unit checking capability.

CONTENTS
Chapter 1 Introduction and Basic Concepts
Chapter 2 Heat Conduction Equation
Chapter 3 Steady Heat Conduction
Chapter 4 Transient Heat Conduction
Chapter 5 Numerical Methods in Heat Conduction
Chapter 6 Fundamentals of Convection
Chapter 7 External Forced Convection
Chapter 8 Internal Forced Convection
Chapter 9 Natural Convection
Chapter 10 Boiling and Condensation
As one of the most popular heat transfer texts, Jack Holman's Heat Transfer is noted for its clarity, accessible approach, and inclusion of many examples and problem sets. The new tenth edition retains the straightforward, to-the-point writing style while covering both analytical and empirical approaches to the subject. Throughout the book, emphasis is placed on physical understanding while, at the same time, relying on meaningful experimental data in those situations that do not permit a simple analytical solution. New examples and templates provide students with updated resources for computer-numerical solutions.

NEW TO THIS EDITION
❖ There is a new chapter on Summary and Design Information (Ch. 12).
❖ New and revised homework problems have been added throughout.
❖ Numerous calculation tables are offered in Chapter 12 as an aid in preliminary design work. The chapter also features 11 new examples illustrating the use of these charts.

CONTENTS
1 Introduction
2 Steady-State Conduction—One Dimension
3 Steady-State Conduction—Multiple Dimensions
4 Unsteady-State Conduction
5 Principles of Convection
6 Empirical and Practical Relations for Forced-Convection Heat Transfer
7 Natural Convection Systems
8 Radiation Heat Transfer
9 Condensation and Boiling Heat Transfer
10 Heat Exchangers
11 Mass Transfer
12 Summary and Design Information

International Edition

HEAT AND MASS TRANSFER
A Practical Approach
Third Edition
by Yunus A. Cengel, University Of Nevada-Reno
2007 / Hardcover / 928 pages
ISBN: 9780073250359 (with EES CD)
www.mhhe.com/cengel

With complete coverage of the basic principles of heat transfer and a broad range of applications in a flexible format, Heat Transfer: A Practical Approach provides the perfect blend of fundamentals and applications. The text provides a highly intuitive and practical understanding of the material by emphasizing the physics and the underlying physical phenomena involved. Key: Text covers the standard topics of heat transfer with an emphasis on physics and real-world every day applications, while de-emphasizing the intimidating heavy mathematical aspects. This approach is designed to take advantage of students' intuition, making the learning process easier and more engaging. Key: The new edition will add PowerPoint lecture slides for instructors and helpful web-links for students. Key: 30% of the texts 2000 Homework Problems including design, computer, essay and lab-type problems are new or revised. Using a reader-friendly approach and a conversational writing style, the book is self-instructive and entertains while it teaches. It shows that highly technical matter can be communicated effectively in a simple yet precise language.

CONTENTS
1 Introduction and Basic Concepts.
2 Heat Conduction Equation.
3 Steady Heat Conduction.
4 Transient Heat Conduction.
5 Numerical Methods in Heat Conduction.
6 Fundamentals of Convection.
7 External Forced Convection.
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9 Natural Convection.
10 Boiling and Condensation.
11 Heat Exchangers.
12 Fundamentals of Radiation.
13 Radiation Heat Transfer.
14 Mass Transfer.
Appendix 1 Property Tables and Charts (SI Units).
Appendix 2 Property Tables and Charts (English Units).
Appendix 3 Introduction to EES.
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15 Cooling of Electronic Equipment.
16 Heating and Cooling of Buildings.
17 Refrigeration and Freezing of Foods
MECHANICAL ENGINEERING

SCHAUM’S OUTLINE OF HEAT TRANSFER
Second Edition
by Donald Pitts, University of Tennessee
1998 / 384 pages
ISBN: 9780070502079
(A Schaum’s Publication)

CONTENTS
Introduction.
One-Dimensional Steady-State Conduction.
Multidimensional Steady-State Conduction.
Time-Varying Conduction.
Fluid Mechanics.
Forced Convection: Laminar Flow.
Forced Convection: Turbulent Flow.
Natural Convection.
Boiling and Condensation.
Heat Exchangers.
Radiation.
Appendices:

Convective Heat Transfer

International Edition

CONVETICHEAT AND MASS TRANSFER
Fourth Edition
by William M Kays, Stanford University; Michael E Crawford, University of Texas-Austin and Bernhard Weigand, Universität Stuttgart
2005 / 512 pages
ISBN: 9780072990737 (with Engg Sub Card)
ISBN: 9780071238298 [IE]
www.mhhe.com/kays

CONTENTS
1 Introduction.
2 Conservation Principles.
3 Fluid Stresses And Flux Laws.
4 The Differential Equations Of The Laminar Boundary Layer.
5 The Integral Equations Of The Boundary Layer.
6 The Differential Equations Of The Turbulent Boundary Layer.
7 Momentum Transfer: Laminar Flow Inside Tubes.
8 Heat Transfer: Laminar Flow Inside Tubes.
9 Momentum Transfer: The Laminar External Boundary Layer.
10 Heat Transfer: The Laminar External Boundary Layer.
11 Momentum Transfer: The Turbulent Boundary Layer.
12 Heat Transfer: The Turbulent Boundary Layer.
13 Momentum Transfer: Turbulent Flow In Tubes.
15 The Influence Of Temperature-Dependent Fluid Properties.
16 Convective Heat Transfer At High Velocities.
17 Free-Convection Boundary Layers.
18 Convective Mass Transfer: Basic Definitions And Formulation Of A Simplified Theory.
19 Convective Mass Transfer: Evaluation Of The Mass-Transfer Conductance From The Equation.
20 Convective Mass Transfer: Examples For Application Of The Simplified Method

Combustion Engineering

International Edition

AN INTRODUCTION TO COMBUSTION Concepts and Applications with Software
Second Edition
by Stephen B Turns, Pennsylvania State University, University Park
2000 / 704 pages / Hardcover
ISBN: 9780072350449 (with CD)
ISBN: 9780071260725 [IE with CD]

CONTENTS
Preface
Preface to the Second Edition
Preface to the First Edition
Chapter 1: Introduction
Chapter 2: Combustion and Thermochemistry
Chapter 3: Introduction to Mass Transfer
Chapter 4: Chemical Kinetics
Chapter 5: Some Important Chemical Mechanisms
Chapter 6: Coupling Chemical and Thermal Analyses of Reacting Systems
Chapter 7: Simplified Conversation Equations for Reacting Flows
Chapter 8: Laminar Premixed Flames
Chapter 9: Laminar Diffusion Flames
Chapter 10: Droplet Evaporation and Burning
Chapter 11: Introduction to Turbulent Flows
Chapter 12: Turbulent Premixed Flames
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Chapter 14: Burning of Solids
Chapter 15: Pollutant Emissions
Chapter 16: Detonations
Appendix A: Selected Thermodynamic Properties of Gases Comprising C-H-O-N System
Appendix B: Fuel Properties
Appendix C: Selected Properties of Air, Nitrogen, and Oxygen
Appendix D: Diffusion Coefficients and Methodology for their Estimation
Appendix E: Generalized Newton’s Method for the Solution of Nonlinear Equations
Appendix F: Computer Codes for Equilibrium Products of Hydrocarbon-Air Combustion Motivation
Internal Combustion Engines

INTERNAL COMBUSTION ENGINES
Third Edition
by V Ganesan, Indian Institute of Technology, Madras
2007 (July 2007)
ISBN: 9780070648173
(McGraw-Hill India Title)
www.mhhe.com/ganesan/ice3e

CONTENTS
1. Introduction
2. Review of Basic Principles
3. Air-Standard Cycles and Their Analysis
4. Fuel–Air Cycles and their Analysis
5. Actual Cycles and their Analysis
6. Fuels
7. Alternate Fuels
8. Carburetion
9. Mechanical Injection Systems
10. Electronic Injection Systems
11. Ignition
12. Combustion and Combustion Chambers
13. Engine Friction and Lubrication
14. Heat Rejection and Cooling
15. Engine Emissions and Their Control
16. Measurements and Testing
17. Performance Parameters and Characteristics
18. Engine Electronics
19. Supercharging
20. Two-Stroke Engines

Compressible Flow/Gas Dynamics

INTERNATIONAL EDITION
MODERN COMPRESSIBLE FLOW
With Historical Perspective
Third Edition
by John D. Anderson University of Maryland—College Park
2003 / 776 pages
ISBN: 9780072424430
ISBN: 9780071241366 [IE]
http://highered.mcgraw-hill.com/sites/0072424435

CONTENTS
1 Compressible Flow - Some History and Introductory Thoughts
2 Integral Forms of the observation Equations for Inviscid Flows
3 One-Dimensional Flow
4 Oblique Shock and Expansion Waves
5 Quasi-One-Dimensional Flow
6 Differential Conservation Equations Revisited for Inviscid Flows
7 Unsteady Wave Motion
8 General Conservation Equations Revisited: Velocity Potential Equation
9 Linearized Flow
10 Conical Flow
11 Numerical Techniques for Steady Supersonic Flow
12 The Time Technique With Application to Supersonic Blunt Bodies and Nozzles
13 Three-Dimensional Flow
14 Transonic Flow
15 Hypersonic Flow
16 Properties of High-Temperature Gases
17 High-Temperature Flows: Basic Examples

International Edition

INTERNAL COMBUSTION ENGINE FUNDAMENTALS
by John Heywood, Massachusetts Institute of Technology
1988 / 930 pages
ISBN: 9780070286375
ISBN: 9780071004992 [IE]

CONTENTS
1 Engine Types and Their Operations.
2 Engine Design and Operating Parameters.
3 Thermochemistry of Fuel-Air Mixtures.
4 Properties of Working Fluids.
5 Ideal Models of Engine Cycles.
6 Gas Exchange Processes.
7 SI Engine Fuel Metering and Manifold Phenomena.
8 Charge Motion within the Cylinder.
9 Combustion in Ignition Engines.
10 Combustion in Compression Ignition Engines.
11 Pollutant Formation and Control.
12 Engine Heat Transfer.
13 Engine Friction and Lubrication.
15 Engine Operating Characteristics.
Appendices
Refrigeration & Air Conditioning/HVAC

International Edition

Refrigeration and Air Conditioning
Third Edition
by C P Arora, Indian Institute of Technology, Delhi
2008 / Softcover / 980 pages
ISBN: 9780070083905
ISBN: 9780071267564 [IE]
(McGraw-Hill India Title)

http://www.mhhe.com/arora/rac3e

The third edition has been written keeping in mind the current scenario in Refrigeration and Air Conditioning industry. As a result the book explains and emphasis on the new alternative refrigerants being used today. Numerous new topics, comparison tables and solved problems have been added. In all it is the most updated and comprehensive book on the subject.

Contents
1. Introduction
2. Refrigeration Machine and Reversed Carnot Cycle
3. Vapour Compression System
4. Refrigerants
5. Multipressure Systems
6. Refrigerant Compressors
7. Condensers
8. Expansion Devices
9. Evaporators
10. Complete Vapour Compression System
11. Gas Cycle Refrigeration
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14. Properties of Moist Air
15. Psychrometry of Air-Conditioning Processes
16. Design Conditions
17. Solar Radiation
18. Heat Transfer through Building Structures
19. Load Calculation and Applied Psychrometrics
20. Design of Air-Conditioning Apparatus
21. Transmission and Distribution of Air
22. Fans
23. Refrigeration and Air-Conditioning Control
24. Application in Food Refrigeration processing and Industrial Air Conditioning

Power Plant Engineering
Third Edition
by P K Nig, Indian Institute of Technology, Kharagpur
2007 / Softcover / 992 pages
ISBN: 9780070648159
(McGraw-Hill India Title)

http://highered.mcgraw-hill.com/sites/0070648158

Contents
1. Introduction: Economics of Power Generation
2. Analysis of Steam Cycles
3. Combined Cycle Power Generation
4. Fuels and Combustion
5. Combustion Mechanism, Combustion Equipment and Firing Methods
6. Steam Generators
7. Steam Turbines
8. Condenser, Feedwater and Circulating Water Systems
9. Nuclear Power Plants
10. Hydroelectric Power Plant
11. Diesel Engine and Gas Turbines Power Plants
12. Energy Storage
13. Non-Conventional Power Generation

Refrigeration and Air Conditioning
Second Edition
by Wilbert Stoesser, University of Illinois/Urbana; Jerold Jones, University of Texas, Austin
1982 / 443 pages
ISBN: 9780070665910 [IE]

Contents
1. Applications of Refrigeration and Air Conditioning
2. Thermal Principles
3. Psychrometry and Wetted Surface Heat Transfer
4. Load Calculations
5. Air Conditioning Systems
6. Fan and Duct Systems
7. Pumps and Piping
8. Cooling and Dehumidifying Coils
9. Air Conditioning Control
10. The Vapor-Compression Cycle
11. Compressors
12. Condensers and Evaporators
13. Expansion Devices
14. Vapor Compression System Analysis
15. Refrigerants
16. Multipressure Systems
17. Absorption Refrigeration
18. Heat Pumps
19. Cooling Towers and Evaporative Condensers
20. Solar Energy
21. Acoustics and Noise Control
MECHANICAL ENGINEERING

Mechanical Technology

International Edition

OIL HYDRAULIC SYSTEMS: Principles and Maintenance
by S R Majumdar, formerly Director, Central Staff Training and Research Institute (CSTARI), Kolkata
2001 / 464 pages / Hardcover
ISBN: 9780074637487
ISBN: 9780071204057 [IE]
(McGraw-Hill India Title)
(A Trade & Technology Title)

CONTENTS
2. Hydraulic oils and fluid properties.
3. Filters & filtration.
4. Hydraulics pumps construction, sizing and selection.
5. Direction control valves.
6. Flow and pressure control.
8. Linear Actuators.
9. Rotary actuators and hydrostatic transmission.
11. Hydraulic reservoirs and accumulators.
13. Seals and packings.
15. Hydraulic system maintenance, repair and reconditioning

CAD/CAM

International Edition

MASTERING CAD/CAM
by Ibrahim Zaid, Northeastern University
2005 / 992 pages / Hardcover
ISBN: 9780072976816 (with Engg Sub Card) - Out of Print
ISBN: 9780071239332 [IE]
www.mhhe.com/zaidl

CONTENTS
Part I: Using CAD/CAM Systems:
Chapter 1: Introduction.
Chapter 2: 3D Modeling and Viewing.
Chapter 3: Modeling Aids and Manipulations.
Chapter 4: Engineering Drawings.
Chapter 5: Customizing CAD/CAM Systems.
Part II: Geometric Modeling:
Chapter 6: Curves.
Chapter 7: Surfaces.
Chapter 8: NURBS.
Chapter 9: Solids.
Chapter 10: Features and Parametrics.
Part III: Computer Graphics:
Chapter 11: Graphics Display.
Chapter 12: Geometric Transformations.
Chapter 13: Rendering and Visualization.
Chapter 14: Computer Animation.
Part IV: Product Development and Design:
Chapter 15: Mass Property Calculations.
Chapter 16: Assembly Modeling.
Chapter 17: Finite Element Modeling and Analysis.
Chapter 18: Product Data Exchange.
Chapter 19: Collaborative Design.
Part V: Product Management and Manufacturing:
Chapter 20: Engineering Tolerances.
Chapter 22: Part Programming.
Chapter 23: Product Lifecycle Management.

Appendices:
A Bibliography.
B Linear Algebra.
C ANSI and ISO Tolerance Tables.
MECHANICAL ENGINEERING

International Edition

CAD/CAM Principles and Applications
Second Edition
by P.N. Rao, University of Iowa, USA
2004 / 756 pages
ISBN: 9780070583733
ISBN: 9780071242318 [IE]
(McGraw-Hill India Title)
http://highered.mcgraw-hill.com/sites/0070583730

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3 Computer Graphics
4 Geometric Modelling
5 CAD Standards
6 Introduction to a drafting system
7 Introduction to a modelling systems
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10 CNC Hardware Basics
11 CNC Tooling
12 CNC Machine tools and Controls systems
13 CNC Programming
14 Turning Centre Programming
15 Advanced Part Programming Methods
16 Computer aided part programming
17 Information Requirements of Manufacturing
18 Group Technology and Computer Aided Process Planning
19 Production Planning and Control
20 Communications
21 Material Handling Systems
22 Flexible Manufacturing Systems
23 Computer Integrated Manufacturing

Engineering Maths/Statistics

International Edition

Statistics for Engineers and Scientists
Third Edition
by William Navidi, Colorado School Of Mines
2011 (February 2010) / Hardcover / 928 pages
ISBN: 9780073376332
ISBN: 9780071222051 [IE]
www.mhhe.com/navidi

Statistics for Engineers and Scientists stands out for its crystal clear presentation of applied statistics. Suitable for a one or two semester course, the book takes a practical approach to methods of statistical modeling and data analysis that are most often used in scientific work.

Statistics for Engineers and Scientists features a unique approach highlighted by an engaging writing style that explains difficult concepts clearly, along with the use of contemporary real world data sets to help motivate students and show direct connections to industry and research. While focusing on practical applications of statistics, the text makes extensive use of examples to motivate fundamental concepts and to develop intuition.

NEW TO THIS EDITION
❖ Over 250 new problems have been added
❖ A new section was added on Tolerance and Prediction Intervals in Chapter 5; the discussion of controlled experiments and observational studies was added to Chapter 1; and confounding in controlled experiments was added in Chapter 7.
❖ A CONNECT site features power points, Datasets, image library, solutions, and algorithmic problems.

CONTENTS
Chapter 1: Sampling and Descriptive Statistics
Chapter 2: Probability
Chapter 3: Propagation of Error
Chapter 4: Commonly Used Distributions
Chapter 5: Confidence Intervals
Chapter 6: Hypothesis Testing
Chapter 7: Correlation and Simple Linear Regression
Chapter 8: Multiple Regression
Chapter 9: Factorial Experiments
Chapter 10: Statistical Quality Control
A Tables
B Partial Derivatives
C Suggestions for Further Reading
Answers to Selected Exercises

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International Edition

PRINCIPLES OF STATISTICS FOR ENGINEERS AND SCIENTISTS
by William C. Navidi, Colorado School of Mines

2010 (January 2009) / Hardcover / 608 pages
ISBN: 9780077289317
ISBN: 9780070166974 [IE]

www.mhhe.com/navidi

Principles of Statistics for Engineers and Scientists offers the same crystal clear presentation of applied statistics as Bill Navidi's Statistics for Engineers and Scientists text, in a manner especially designed for the needs of a one-semester course that focuses on applications.

The text features a unique approach accentuated by an engaging writing style that explains difficult concepts clearly. By presenting ideas in the context of real-world data featured in plentiful examples, the book motivates students to understand fundamental concepts through practical examples found in industry and research.

FEATURES

- ARIS, McGraw-Hill's Online Homework Manager, features algorithmic problems and gradebook capability. Instructors will have access to data sets, solutions, lecture PowerPoints, and images from the text.
- A commitment to accuracy for which Bill Navidi's texts have become known.
- In line with modern trends, the text contains exercises suitable for solving with computer software. These examples and exercises involve interpreting, as well as generating, computer output. The student edition of MINITAB®, the widely used statistical software package is available bundled with the text.
- With a focus on applications, the presentation is condensed to allow for coverage of a greater number of topics in a one-semester course.
- Topics are organized to allow for flexibility in the order of presentation. An introduction to descriptive aspects of linear regression is presented in Chapter 2, which is useful for courses in which there is not enough time to cover inferential methods. Inferential methods are presented in Chapter 8.
- Many examples and exercises use data from articles published in scientific journals. This motivates students by showing them that the concepts they are learning are actually used by scientists and engineers.

CONTENTS

1 Sampling and Descriptive Statistics
2 Summarizing Bivariate Data
3 Probability
4 Commonly Used Distributions
5 Point and Interval Estimation for a Single Sample
6 Hypothesis Tests for a Single Sample
7 Inferences for Two Samples
8 Inference in Linear Models
9 Factorial Experiments
10 Statistical Quality Control
Instructors love Numerical Methods for Engineers because it makes teaching easy! Students love it because it is written for them—with clear explanations and examples throughout. The text features a broad array of applications that span all engineering disciplines. The sixth edition retains the successful instructional techniques of earlier editions. Chapra and Canale’s unique approach opens each part of the text with sections called Motivation, Mathematical Background, and Orientation. This prepares the student for upcoming problems in a motivating and engaging manner. Each part closes with an Epilogue containing Trade-Offs, Important Relationships and Formulas, and Advanced Methods and Additional References. Much more than a summary, the Epilogue deepens understanding of what has been learned and provides a peek into more advanced methods.

Approximately 20% of the problems are new or revised in this edition. The expanded breadth of engineering disciplines covered is especially evident in the problems, which now cover such areas as biotechnology and biomedical engineering.

Users will find use of software packages, specifically MATLAB®, Excel® with VBA and Mathcad®. This includes material on developing MATLAB® m-files and VBA macros.

NEW TO THIS EDITION

- Approximately 20% of the problems are new or revised for this edition.

CONTENTS

Part 1 Modeling, Computers, and Error Analysis
1 Mathematical Modeling and Engineering Problem Solving
2 Programming and Software
3 Approximations and Round-Off Errors
4 Truncation Errors and the Taylor Series
Part 2 Roots of Equations
5 Bracketing Methods
6 Open Methods
7 Roots of Polynomials
8 Case Studies: Roots of Equations
Part 3 Linear Algebraic Equations
9 Gauss Elimination
10 LU Decomposition and Matrix Inversion
11 Special Matrices and Gauss-Seidel
12 Case Studies: Linear Algebraic Equations
Part 4 Optimization
13 One-Dimensional Unconstrained Optimization
14 Multidimensional Unconstrained Optimization
15 Constrained Optimization
16 Case Studies: Optimization
Part 5 Curve Fitting
17 Least-Squares Regression
18 Interpolation
19 Fourier Approximation
Part 6 Numerical Differentiation and Integration
20 Case Studies: Curve Fitting
21 Newton-Cotes Integration Formulas
22 Integration of Equations
23 Numerical Differentiation
24 Case Studies: Numerical Integration and Differentiation
Part 7 Ordinary Differential Equations
25 Runge-Kutta Methods
26 Stiffness and Multistep Methods
27 Boundary-Value and Eigenvalue Problems
28 Case Studies: Ordinary Differential Equations
Part 8 Partial Differential Equations
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30 Finite Difference: Parabolic Equations
31 Finite-Element Method
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AN INTRODUCTION TO THE FINITE ELEMENT METHOD

by JN Reddy, Texas A&M University
2006 / Hardcover / 912 pages
ISBN: 9780072466850
www.mbhe.com/reddy3e

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1. Introduction
2. Mathematical Preliminaries, Integral Formulations, and Variational Methods
4. Second-order Differential Equations in One Dimension: Applications
5. Beams and Frames
6. Eigenvalue and Time-Dependent Problems
7. Computer Implementation
8. Single-Variable Problems in Two Dimensions
9. Interpolation Functions, Numerical Integration, and Modeling Considerations
10. Flows of Viscous Incompressible Fluids
11. Plane Elasticity
12. Bending of Elastic Plates
13. Computer Implementation of Two-Dimensional Problems
14. Prelude to Advanced Topics
SCHAUM'S OUTLINE OF FINITE ELEMENT ANALYSIS
by George R. Buchanan, Ph.D., Tennessee Technological University
1995 / Softcover / 264 pages
ISBN: 9780070087149
(A Schaum's Publication)

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Mathematical Background
One-Dimensional Finite Elements
Two- Dimensional Finite Elements
Variational Principles, Galerkin Approximation, and Partial
Differential Equations
Isoparametric Finite Elements
Selected Topics in Finite Element Analysis
References
Appendix: Computer Code for Coupled Steady-State
Thermoelasticity

INSTRUMENTATION, MEASUREMENT AND ANALYSIS
Third Edition
by B C Nakra, NSIT and K K Chaudhry, Indian Institute of Technology, New Delhi
July 2009 / Softcover / 664 pages
ISBN: 9780070151277
(McGraw-Hill India Title)
http://www.mhhe.com/nakra/ima3e

This well known book on Instrumentation, Measurements and Analysis encompasses the three viz. Instrumentation Principles, Measurement Techniques and Data Analysis and presents them in a form that is lucid and easily comprehensible to students.

The book is divided into three main parts: Part 1 deals with the general treatment of instruments and their characteristics; Part 2 gives the details of measurement of actual physical variables referring to part 1 where ever necessary; Part 3 discusses statistical analysis of data.

The second edition published in 2004 has been revised by addition of a new chapter on “Electrical Measurements” covering measurement of resistances, inductances, capacitance, voltage, current, power, energy, magnetic flux measurements, wave form generation and measurement, frequency and phase measurements. Another new chapter on Dimensional Measurement and its Application to Metrology has been added which covers Surface measurement, Area Measurement by planimeter, surface roughness by Taly surf techniques, Angle Measurement by using sign bars.

This has been done according to the suggestions received from reviewers and several teachers to make the book self-contained.

Further, additions have been made to the existing chapters by covering emerging topics like virtual instruments and dimensional measurements for metrological applications including surface roughness, size, area measurement and principle and working of slip gages, pneumatic and optical gages etc. A number of problems and an appendix have been added and correction, where necessary been incorporated.

NEW TO THIS EDITION
- New Chapter on Electrical Measurements (Chapter 20)
- New Chapter on Dimensional Measurement and its Application to Meteorology (Chapter 7)
- New Sections on:
  - Virtual Instruments
  - NOx and SOx measurement techniques
  - Coriolis mass flow meter
- Increased number of solved examples and review questions.

Pedagogy:
Pedagogy includes:
- Examples: 238
- Review Questions: 110

CONTENTS
1. Introduction to Instruments and Their Representation
2. Static Performance Characteristics of Instruments
3. Dynamics Characteristics of Instruments
4. Transducer Elements
5. Intermediate Elements
6. Indicating, Recording and Display Elements
7. Motion and Vibration Measurements
8. Dimensional Metrology
9. Force Measurement
10. Torque and Power Measurement
11. Pressure Measurement
12. Temperature Measurement
13. Flow Measurement
14. Acoustics Measurement
15. Signal and Systems Analysis
16. Conditions Monitoring and Signature Analysis Applications
17. Miscellaneous Instruments in Industrial, Biomedical and Environmental Applications
18. Recent Developments in Instrumentations and Measurements
19. Control Engineering Applications
20. Electrical Measurements
21. Basic Statistical Concepts
22. Normal Distribution
23. Graphical Representation and Curve Fitting of Data
King's Introduction to Data Acquisition with LabVIEW teaches students how to measure physical properties with a computer based instrumentation system. It uses numerous examples and the National Instruments LabVIEW graphical programming environment to lower the barriers to learning and reduce the time required to successfully perform automated measurements.

LabVIEW is a powerful graphical programming environment that abstracts tedious low-level interface, syntax, and formatting tasks allowing users to focus on higher level goals and accomplish more.

CONTENTS
1. Introduction
2. The LabVIEW Environment
3. Data Acquisition
4. Basic DAQ Software Design & Flow Control
5. DAO State Machines
6. Arrays
7. Input and Output
8. High Frequency DAQ
9. Summary
EXPERIMENTAL METHODS FOR ENGINEERS
Seventh Edition
by Jack Holman, Southern Methodist University
2001 / 720 pages
ISBN: 9780073660554
ISBN: 9780071181655 [IE]
www.mbh.com/engcs/engmech/holman/

CONTENTS
Chapter 1: Introduction.
Chapter 2: Basic Concepts.
Chapter 3: Analysis of Experimental Data.
Chapter 4: Basic Electrical Measurements and Sensing Devices.
Chapter 5: Displacement and Area Measurements.
Chapter 6: Pressure Measurement.

PRINCIPLES OF FOUNDRY TECHNOLOGY
Fifth Edition
by R P Jain, BM Institute of Engineering & Technology, and R K Jain
2009 / 412 pages
ISBN: 97800707151291
(McGraw-Hill India Title)
www.mbh.com/jain/jf5e

This edition has been revised keeping in mind the latest technological developments in this field, thus making it a complete offering on this subject. The simple and lucid language used by the author makes this book an ideal choice for both students and teachers alike.

CONTENTS
Chapter 1. Introduction to Foundry Technology
Chapter 2. Technology of Patternmaking
Chapter 3. Technology of Moulding and Coremaking
Chapter 4. Technology of Metal Mould-Casting Processes
Chapter 5. Gating and Risering of Castings
Chapter 6. Technology of Melting and Casting
Chapter 7. Defects in Castings and Quality Control
Chapter 8. Fettling and Heat Treatment of Castings
Chapter 9. Modernisation, Mechanisation and Computerisation of Foundries
Chapter 10. Application of CAD/CAM in Foundries
This new book takes a comprehensive look at manufacturing planning and control from the manufacturing company's perspective but the focus is both on the intra-organisational system and on the supply chain as a whole. With its unique focus on understanding the characteristics of planning processes, methods and techniques and how to design and use processes, methods and techniques in various planning environments, this book has an important relevance from an applied industry point of view. It provides you with knowledge and guidelines on how to develop the planning environment, and how to design and use planning processes and methods efficiently and effectively in operational practice. This book is an important learning tool for undergraduates and postgraduates and will help them develop an understanding of manufacturing planning and control that goes beyond statistics and calculation, and provides knowledge and frameworks for designing planning processes in different industrial environments. This book supports all modules on APICS's CPIM certification program.

FEATURES
- Problems, Exercises Examples
- Some of the chapters feature problems and exercises to help explain concepts. Full solutions to the Problems are provided in Appendix A. Boxed examples show how a particular concept or idea is used in practice.
- Figures and Tables
- Each chapter provides a number of figures, illustrations and tables to help you visualize the examples. Descriptive captions summarise important concepts and explain the relevance of the illustration.
- Cases and Discussion Questions
- This book includes cases at the end of many of the chapters to illustrate current practice and key concepts defined and described in the book. Each case is followed by a set of related questions to help you critically apply your understanding and further develop some of the topics introduced to you.
- Discussion Tasks
- This feature encourages you to review and apply the knowledge you have acquired from each chapter.

CONTENTS
Part 1: Starting Points of Production and Materials Management
Chapter 1: Introduction and Background
Chapter 2: The Manufacturing Company
Chapter 3: Approaches in Manufacturing Planning and Control
Part 2: Preconditions for Manufacturing Planning and Control
Chapter 4: Manufacturing Planning and Control Performance
Chapter 5: Basic data for Manufacturing Operations
Chapter 6: Planning Parameters and Variables
Part 3: Forecasting and Master Planning
Chapter 7: Forecasting
Chapter 8: Customer Order Management
Chapter 9: Sales and Operations Planning
Chapter 10: Master Production Scheduling
Part 4: Detailed Planning and Execution
Chapter 11: Material Planning
Chapter 12: Lot Sizing
Chapter 13: Determining Safety Stocks
Chapter 14: Capacity Planning
Chapter 15: Execution and Control in Pull Environments
Chapter 16: Execution and Control in a Traditional Planning Environment
Chapter 17: Procurement of Materials
Chapter 18: Inventory Accounting
Appendices
A: Solutions to Problems
B: Safety Stock Tables

MANUFACTURING TECHNOLOGY
VOLUME I
Foundry, Forming and Welding
Third Edition
by P.N. Rao, Department of Industrial Technology, University of Northern Illinois
2008 / Softcover / 528 pages
ISBN: 9780070087989
[A McGraw-Hill India Title]
www.mhhe.com/rao/mftw3e

The revision of this hallmark text on Manufacturing Technology has been done keeping in mind the changes in the course as well as in the requirements of students and teachers. The original 29 chapters in the book have been wrapped up in the present 10 chapters. This is to ensure that the content is concise and relevant and there is no repetition of topics. Numerous new topics, solved and unsolved problems have been added. In all it is the most updated and comprehensive yet concise book on the subject.

CONTENTS
1. Introduction
2. Engineering Materials
3. Metal-Casting Processes
4. Gating Systems for Casting
5. Melting and Casting Quality
6. Special Casting Processes
7. Metal Forming Processes
8. Sheet Metal Operations
9. Welding Processes
10. Other Fabrication Processes
11. Powder Metallurgy
12. Plastic Processing
International Edition

INTRODUCTION TO MANUFACTURING PROCESSES
Third Edition
by John Schey, University of Waterloo
2000 / 984 pages
ISBN: 9780070311367
ISBN: 9780071169110 [IE]
www.mhhe.com/engsys/mec/schey

CONTENTS
1 Introduction to Manufacturing
2 Manu-facturing
3 Geometric Attributes of Manufactured Products
4 Service Attributes of Manufactured Products
5 Materials in Design and Manufacturing
6 Solidification and Heat Treatment of Metals
7 Metal Casting
8 Plastic Deformation of Metals
9 Bulk Deformation Processes
10 Sheet-Metalworking Processes
11 Powder-Metallurgy
12 Processing of Ceramics
13 Polymers and Plastics
14 Processing of Plastics
15 Composites
16 Machining
17 Nontraditional Machining Processes
18 Joining Processes
19 Surface Treatments
20 Manu-facture of Semiconductor Devices
21 Manu-factoring Systems
22 Competitive Aspects of Manufacturing Processes

Intro to Engineering Materials

NEW

International Edition

FOUNDATIONS OF MATERIALS SCIENCE AND ENGINEERING
Fifth Edition
William F. Smith, University Of Central Florida, and Javad Hashemi, Texas Tech University

2010 (April 2009) / Hardcover / 1056 pages
ISBN: 9780073529240

Smith/Hashemi's Foundations of Materials Science and Engineering, 5/e provides an eminently readable and understandable overview of engineering materials for undergraduate students. This edition offers a fully revised chemistry chapter and a new chapter on biomaterials as well as a new taxonomy for homework problems that will help students and instructors gauge and set goals for student learning. Through concise explanations, numerous worked-out examples, a wealth of illustrations & photos, and a brand new set of online resources, the new edition provides the most student-friendly introduction to the science & engineering of materials.

The extensive media package available with the text provides Virtual Labs, tutorials, and animations, as well as image files, case studies, FE Exam review questions, and a solutions manual and lecture PowerPoint files for instructors.

NEW TO THIS EDITION
- Fully revised Chemistry chapter and new material on Biomaterials.
- New/revised problems throughout.

CONTENTS
1 Introduction to Materials Science and Engineering
2 Atomic Structure and Bonding
3 Crystal and Amorphous Structures in Materials
4 Solidification, Crystalline Imperfections
5 Thermally Activated Processes and Diffusion in Solids
6 Mechanical Properties of Metals I
7 Mechanical Properties of Metals II
8 Phase Diagrams
9 Engineering Alloys
10 Polymeric Materials
11 Ceramics
12 Composite Materials
13 Corrosion
14 Electrical Properties of Materials
15 Optical Properties and Superconductive Materials
16 Magnetic Properties
17 Biological and Biomaterials

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International Edition

FOUNDATIONS OF MATERIALS SCIENCE AND ENGINEERING
Fourth Edition
by William Smith, University of Central Florida and Javad Hashemi, Texas Tech University
2006 / 928 pages / Hardcover
ISBN: 9780073107639 (with Student CD) - Out of Print
ISBN: 9780071256902 [IE with Student CD]
www.mhhe.com/smithmaterials

CONTENTS
1 Introduction to Materials Science and Engineering.
2 Atomic Structure and Bonding.
3 Crystal Structures and Crystal Geometry.
4 Solidification, Crystalline Imperfections, and Diffusion in Solids.
5 Mechanical Properties of Metals I.
6 Mechanical Properties of Metals II.
7 Polymeric Materials.
8 Optical Properties of Materials.
9 Engineering Alloys.
10 Ceramics.
11 Composite Materials.
12 Corrosion.
14 Optical Properties and Superconductive Materials.
15 Magnetic Materials.
Appendix A Some Properties of Selected Elements.
Appendix B Ionic Radii of the Elements.
Appendix C Selected Physical Quantities and Their Units.
Appendix D Answers to Selected Problems.
Appendix E References for Further Study

MECHANICAL ENGINEERING

Kinematics/Dynamics of Machines

THEORY OF MACHINES
Third Edition
by Rattan, S.S, Professor, Department of Mechanical Engineering, NIT Kurukshetra

2009 / Softcover / 736 pages
ISBN: 9780070144774
(McGraw-Hill India Title)
http://www.mhhe.com/rattan/com

This well established book on Theory of Machines which sells more than 17,000 copies a year needs no introduction. It has become a benchmark on how a book should be written considering that it is popular amongst both bright and average students alike.

The book covers two-semester course on Kinematics and Dynamics of Machinery comprehensively. Various important concepts are presented in a logical, innovative and lucid manner. Physical concepts have been maintained in various derivations and simple mathematical methods have been used so that those with limited mathematical skills too can easily understand the exposition.

The contents of the Second Edition have been thoroughly reviewed, revised and updated. Several new sections have been added especially in the chapters on Mechanisms and Machines, Acceleration Analysis, Graphical and Computer Aided Synthesis of Mechanisms, Belts, Ropes and Chains. Topics like Function generation, Path generation, Motion Generation have been rewritten for greater suitability to the course.

This edition is also pedagogically enhanced due to increased number of solved examples and review questions and improved quality of figures.

FEATURES
- Exhaustive coverage of the two-semester course on Kinematics and Dynamics of Machinery.
- Various important concepts are presented in a logical, innovative and lucid manner
- Balanced presentation of Graphical and Analytical approaches. (Chapters 2 and 3 describe graphical methods of velocity and acceleration analysis whereas the analytical approach is discussed in Chapter 4.)
- Inclusion of several new sections especially in the chapters on Mechanisms and Machines, Acceleration Analysis, Graphical and Computer Aided Synthesis of Mechanisms, Belts, Ropes and Chains.
- New Sections on:
- Types of constrained motion, Types of joints, Centre of curvature, Hartmann construction, Euler-Savary equation, Bobillier construction, cubic of the stationary curvature, Chebychev spacing, Flat belt drive vs. V belt drive, Chain drive vs. belt and rope drive, Precision posi-
MECHANICAL ENGINEERING

International Edition

DESIGN OF MACHINERY WITH STUDENT RESOURCE CD
Fourth Edition
by Robert L. Norton, Worcester Polytechnic Institute
2008 (July 2007) / Hardcover
ISBN: 9780073290980 (with Student Resource CD)
ISBN: 9780071278522 (SI Unit)
www.designofmachinery.com

Robert L. Norton’s DESIGN OF MACHINERY, fourth edition, continues the tradition of this best-selling book through its balanced coverage of analysis and design and outstanding use of realistic engineering examples. Through its reader-friendly style of writing, clear exposition of complex topics, and emphasis on synthesis and design, the text succeeds in conveying the art of design as well as the use of modern tools needed for analysis of the kinematics and dynamics of machinery. Numerous two-color illustrations are used throughout to provide a visual approach to understanding mechanisms and machines. Analytical synthesis of linkages is covered, and cam design is given a more thorough, practical treatment than found in other texts.

The fourth edition comes with a bound-in Student Resources DVD, with Norton’s own student-version programs, a customized version of Working Model software and accompanying simulations and movie clips (by Sid Wang, North Carolina A&T University), and numerous instructional and industry-related videos. A website with additional instructor and student resources is available as well.

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Part I Kinematics of Mechanisms
1 Introduction
2 Kinematics Fundamentals
3 Graphical Linkage Synthesis
4 Position Analysis
5 Analytical Linkage Synthesis
6 Velocity Analysis
7 Acceleration Analysis
8 Cam Design
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Part II Dynamics of Machinery
10 Dynamics Fundamentals
11 Dynamic Force Analysis
12 Balancing
13 Engine Dynamics
14 Multicylinder Engines
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DVD Catalog
Shigley’s Mechanical Engineering Design is intended for students beginning the study of mechanical engineering design. Students will find that the text inherently directs them into familiarity with both the basics of design decisions and the standards of industrial components. It combines the straightforward focus on fundamentals that instructors have come to expect, with a modern emphasis on design and new applications.

The ninth edition of Shigley's Mechanical Engineering Design maintains the approach that has made this book the standard in machine design for nearly 50 years.

NEW TO THIS EDITION

- New Homework Problems 40% of the homework problems in this edition are revised.
- Connect is a web-based assignment and assessment platform that helps you connect your students to their coursework and success beyond the course. http://connect.mcgraw-hill.com
- COSMOS Complete Online Solutions Manual Operating System contains solutions to problems in the text within a system that allows professors to select problems, build and save assignments, customize and add their own problems, print or create .pdf assignments and solutions.
- Companion Website contains the solutions manual as well as lecture and image PowerPoint files. http://www.mhhe.com/shigley/

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Chapter 3: Load and Stress Analysis
Chapter 4: Deflection and Stiffness
Part II: Failure Prevention
Chapter 5: Failures Resulting from Static Loading
Chapter 6: Fatigue Failure Resulting from Variable Loading
Part III: Design of Mechanical Elements
Chapter 7: Shafts and Shaft Components
Chapter 8: Screws, Fasteners, and the Design of Nonpermanent Joints
Chapter 9: Welding, Bonding, and the Design of Permanent Joints
Chapter 10: Mechanical Springs
Chapter 11: Rolling-Contact Bearings
Chapter 12: Lubrication and Journal Bearings
Chapter 13: Gears—General
Chapter 14: Spur and Helical Gears
Chapter 15: Bevel and Worm Gears
Chapter 16: Clutches, Brakes, Couplings and Flywheels
Chapter 17: Flexible Mechanical Elements
Chapter 18: Power Transmission Case Study
Part IV: Analysis Tools
Chapter 19: Finite Element Analysis
Chapter 20: Statistical Considerations
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A: Useful Tables
B: Answers to Selected Problems

International Edition

SHIGLEY'S MECHANICAL ENGINEERING DESIGN
Eighth Edition

by Richard Budynas, Rochester Institute Of Technology, and J. Keith Nisbett, University of Missouri - Rolla

2008 (October 2006) / Hardcover
ISBN: 9780073312606 (with Access card)

www.mhhe.com/shigley

The eighth edition of Shigley's Mechanical Engineering Design maintains the basic approaches that have made this book the standard in machine design for over 40 years. At the same time it combines the straightforward focus on fundamentals instructors have come to expect with a modern emphasis on design and new applications. Overall coverage of basic concepts are clear and concise so that readers can easily navigate key topics. Problem sets have been improved, with new problems added to help students progressively work through them. The book has included ARIS, which will have algorithmic problems. The new co-author, Kieth Nisbett has been brought to help smooth out the writing style and has added a key case study on power transmission. All standards have been updated, which will make this the most current text! Also a new chapter on finite elements has been added.

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2 Materials
3 Load and Stress Analysis
4 Deflection and Stiffness
Part II Failure Prevention
5 Failures Resulting from Static Loading
6 Failure Resulting from Variable Loading
Part III Design of Mechanical Elements
7 Shafts and Axles
8 Screws, Fasteners, and the Design of Nonpermanent Joints
9 Welding, Brazing, Bonding, and the Design of Permanent Joints
10 Mechanical Springs
11 Rolling-Contact Bearings
12 Lubrication and Journal Bearings
13 Gears—General
14 Spur and Helical Gears
15 Bevel and Worm Gears
16 Clutches, Brakes, Couplings and Flywheels
17 Flexible Mechanical Elements
Part IV
18 Statistical Considerations
19 Introduction to Finite Element Analysis
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MECHANICAL ENGINEERING

International Edition

FUNDAMENTALS OF MACHINE ELEMENTS
Second Edition
by Bernard J. Honnick, Ohio State University, Columbus; Steven R. Schmid, University of Notre Dame and Bo O. Jacobson, Lund University
2005 / 1,008 pages
ISBN: 9780072976823 (with OLC Bind-In Card and Engg Sub Card) - Out-of-Print
ISBN: 9780071257947 [IE with OLC]
http://highered.mcgraw-hill.com:80/sites/0072465328

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I Fundamentals:
1 Introduction.
2 Load, Stress and Strain.
3 Introduction to Materials and Manufacturing.
4 Stresses and Strains.
5 Deformation.
6 Failure Prediction for Static Loading.
7 Failure Prediction for Cyclic and Impact Loading.
8 Lubrication, Friction and Wear.
II Machine Elements:
9 Columns.
10 Stresses and Deformation in Cylinders.
11 Shafting and Associated Parts.
12 Hydrodynamics and Hydrostatic Bearings and Seals.
13 Rolling-Element Bearings.
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15 Helical, Bevel, and Worm Gears.
16 Fasteners and Power Screws.
17 Springs.
18 Brakes and Clutches.
19 Flexible Machine Designs.
20 Microelectromechanical Devices.
21 Design Projects.
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Appendix A: Material Properties.
Appendix B: Stress Strain Relationships

International Edition

MECHANICAL DESIGN
An Integrated Approach
by Ansel Ugural, New Jersey Institute Technology
2004
ISBN: 9780072921854 (with Bind-In Card) - (Out of Print)
ISBN: 9780071269773 [IE, with corrections]
www.mhhe.com/ugural

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Part I Fundamentals:
1 Introduction to Design.
2 Materials.
3 Stress and Strain.
4 Deflection and Stiffness.
5 Energy Methods in Design.
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7 Static Failure Criteria and Reliability.
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Appendix B Material Properties.
Appendix C Stress Concentration Factors.
Appendix D Solution of the Stress Cubic Equation

SCHAUM'S OUTLINE OF MACHINE DESIGN
by A S Hall, A F Holowenko and H G Laughlin, Purdue University
1984 / 352 pages
ISBN: 9780070255951
(A Schaum's Publication)

CONTENTS
Introduction.
Stresses in Simple Machine Members.
Metal Fits and Tolerances.
Curved Beams.
Deflection and Buckling of Machine Members: Designing Members Subjected to Variable Loads.
Machine Vibrations.
Critical Speeds of Shafts.
Power Transmission Shafting.
Coupling Design.
Keys, Pins, and Splines.
Power Screws and Threaded Fasteners.
Bolt Loading.
Clutches.
Brake Design.
Springs.
Gear Forces.
Spur Gears.
Helical Gears.
Bevel Gears.
Worm Gears.
Rolling Bearings.
Lubrication and Bearing Design.
Belt Drives.
Welding.
Flywheels.
Projects.
THE MECHANICAL DESIGN PROCESS
Fourth Edition
by David G. Ullman, Oregon State University

2010 (February 2009) / Hardcover / 448 pages
ISBN: 9780072975741
ISBN: 9780071267960 [IE]

www.mhhe.com/ullman4e

The fourth edition of The Mechanical Design Process combines a practical overview of the design process with case material and real-life engineering insights. Ullman's work as an innovative designer comes through consistently, and has made this book a favorite with readers. This book conveys the "flavor" of design, addressing both traditional engineering topics as well as real-world issues like creative thinking, synthesis of ideas, visualization, teamwork, sense of customer needs and product success factors, and the financial aspects of design alternatives, in a practical and motivating manner.

The Industrial Clamp brings the design stages and concepts to life, and shows the actual steps taken to generate design ideas and bring them to fruition. Approaches to concept generation, including TRIZ and axiomatic design, are given strong coverage.

This text is appropriate primarily for the Senior Design course taken by mechanical engineering students, though it can also be used in design courses offered earlier in the curriculum. Working engineers also find it to be a readable, practical overview of the modern design process.

NEW TO THIS EDITION
- New examples from the industry, with new photos and diagrams to illustrate the examples throughout.
- Icons direct students to the on-line templates. Over twenty blank templates are available for download from the book's website (www.mhhe.com/ullman4e) to support activities throughout the design process. The text includes many of them filled out for student reference.
- Updated material on making design decisions and project planning
- Updated sections on Design for the Environment and Design for Sustainability

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1 Why Study the Design Process?
2 Understanding Mechanical Design
3 Designers and Design Teams
4 The Design Process and Product Discovery
5 Planning to Design the Product
6 Understanding the Problem and the Development of Engineering Specifications
7 Concept Generation
8 Concept Evaluation and Selection
9 Product Generation
10 Product Evaluation for Performance and the Effects of Variation
11 Product Evaluation: Design For Cost, Manufacture, Assembly, and other Measures
12 Wrapping up the Design Process and Supporting the Product
Appendix A Properties of 25 Materials Most Commonly Used in Mechanical Design
Appendix B Normal Probability
Appendix C The Factor of Safety as a Design Variable
Appendix D Human Factors in Design

International Edition

ENGINEERING DESIGN
Fourth Edition
by George Dieter, University of Maryland-College Park and Linda C Schmidt, University of Maryland-College Park
2009 (March 2008) / Hardcover / 832 pages
ISBN: 9780072837032
ISBN: 9780071271899 [IE, with corrections]

www.mhhe.com/dieter

Dieter’s Engineering Design 4/e represents a major update of this classic textbook for senior design courses. As in previous editions, Engineering Design provides a broader overview of topics than most design texts and contains much more prescriptive guidance on how to carry out design. Dieter focuses on material selection as well as how to implement the design process. Engineering Design provides the senior mechanical engineering students with a realistic understanding of the design process. It is written from the viewpoint that design is the central activity of the engineering profession, and it is more concerned with developing attitudes and approaches than in presenting design techniques and tools.

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Chapter 9: Detail Design
Chapter 10: Modeling and Simulation
Chapter 11: Materials Selection and Materials Engineering
Chapter 12: Design for Manufacturing
Chapter 13: Risk, Reliability, and Safety
Chapter 14: Robust and Quality Design
Chapter 15: Economic Decision Making
Chapter 16: Cost Evaluation
Chapter 17: Legal and Ethical Issues in Engineering Design
Appendices
This book is written for students and teachers engaged in electrical and computer engineering (ECE) design projects, primarily in the senior year. It guides students and faculty through the steps necessary for the successful execution of design projects. The objective of the text is to provide a treatment of the design process in ECE with a sound academic basis that is integrated with practical application. It has a strong guiding vision -- that a solid understanding of the Design Process, Design Tools, and the right mix of Professional Skills are critical for project and career success. This text is unique in providing a comprehensive design treatment for ECE.

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Part I – The Engineering Design Process
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Chapter 2: Project Selection and Needs Identification
Chapter 3: The Requirements Specification
Chapter 4: Concept Generation and Evaluation
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Treating such contemporary design and development issues as identifying customer needs, design for manufacturing, prototyping, and industrial design, Product Design and Development by Ulrich and Eppinger presents in a clear and detailed way a set of product development techniques aimed at bringing together the marketing, design, and manufacturing functions of the enterprise. The integrative methods in the book facilitate problem solving and decision making among people with different disciplinary perspectives, reflecting the current industry toward designing and developing products in cross-functional teams.

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Chapter 1 Introduction
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Chapter 3 Product Planning
Chapter 4 Identifying Customer Needs
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Chapter 7 Concept Selection
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Chapter 12 Prototyping
Chapter 13 Robust Design
Chapter 14 Patents and Intellectual Property
Chapter 15 Product Development Economics
Chapter 16 Managing Projects

Preface: How to Use This Guide
1 Introduction to I-DEAS
2 Part Modeling
3 Modifying Parts
4 Constraints and Constraint Networks
5 Surfacing Techniques
6 Assemblies and Mechanisms
7 Annotation and Drafting
8 Manufacturing
9 Simulation
10 Other I-DEAS Applications, Sheet Metal, Harness, Mold Design, Test
11 Best Practices
12 Collaboration
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Appendix B: Advanced Features and Interfaces
Appendix C: Trouble-shooting Reference. Index
The eighth edition of May and Simpson's Automotive Mechanics Volume 1 covers principles, applications and general servicing requirements that relate to passenger and light commercial vehicles. With full-colour illustrations and photographs, this new edition provides thorough coverage of the most relevant developments in the automotive industry.

This market-leading series addresses the requirements of the Automotive Industry Retail, Service and Repair Training Package (AUR05). A competency grid links the book’s content to the Training Package's competencies to ensure teachers and students are meeting all necessary requirements.

NEW TO THIS EDITION

- Full colour photos and illustrations
- A brand new part covering Alternative Drive Systems, written in response to the increasing use of hybrid and fuel cell drive systems
- Coverage of the latest developments in audio and digital technology such as bluetooth navigation, hands-free mobile phones, GPS, DVD players, MP3s and iPods
- Additional information on workshop safety, including handling hazardous materials, storage and emergency procedures
- Developments in new technology added to each chapter including direct injection LPG, 6-speed transmission and duel-clutch transmission
- Completely rewritten sections on engine management, fuel injection systems and ignition systems, including additional detail on oscilloscopes for diagnosis and testing
- Updated information on Environmental issues with legislative changes

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Part 1: Introduction to motor vehicles
1 Motor vehicle components
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3 Workshop practices
4 Tools and their use
5 Measuring and checking
6 Friction and bearings
7 Seals, gaskets and sealants
8 The environment and the automotive service industry
Part 2: Engines and engine systems
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13 EFI fuel systems
14 Carburettor fuel systems
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17 Clutches
18 Clutch service
19 Manual transmission and transaxles
20 Manual transmission and transaxle service
21 Drive lines and shafts
22 Rear axles and final drives
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26 Brakes
27 Brake service
28 Suspension systems
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31 Steering-system service
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33 Service and maintenance
34 Basic mechanics and diagnosis
35 Basic electronics
36 Effects and applications of electric currents
37 Basic electronics
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Appendix: The SI system of measurement
Common abbreviations
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AUTOMOTIVE MECHANICS
VOLUME 2
Eighth Edition
by Ed May and Les Simpson, TAFE NSW, Ultimo Campus

2009 / Softcover
ISBN: 9780070721883

(McGraw-Hill Australia Title)

The eighth edition of May and Simpson’s Automotive Mechanics Volume 2 covers principles, applications and general servicing requirements that relate to passenger and light commercial vehicles. With full-colour illustrations and photographs, this new edition provides thorough coverage of the most relevant developments in the automotive industry.

This market-leading series addresses the requirements of the Automotive Industry Retail, Service and Repair Training Package (AUR05). A competency grid links the book's content to the Training Package's competencies to ensure teachers and students are meeting all necessary requirements.

NEW TO THIS EDITION

- A Competency grid is provided, to link the book’s content to the competency standards. This ensures that students and teachers can be confident they are meeting the requirements of the training package when they use this book as a resource.
- Additional supplement to address the environmental competency standards. The material in this supplement is designed to meet the requirements for Certificates I to IV.
- Updated coverage of new diagnostic methods throughout.
- Like previous editions, the text offers a logical structure, beginning with the basics, and building on these to address more complex systems.
- Plain language explanations to promote student’s understanding.

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Part 1: Engine construction and overhaul
1 General engine service
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10 Electronic fuel injection and engine management
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Part 3: Diesel engines
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19 Automatic transmissions: torque converters
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Part 6: Electrical systems
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28 Instruments and indicators
29 Body-electrical components
Part 7: Safety, security and convenience
30 Braking: ABS, traction control and vehicle stability
31 Air conditioning
32 Seat belts and seating
33 Supplemental restraint systems (SRS) and occupant safety
34 Remote locking, immobilisers and security
35 Cruise controls and trip computers
36 Audio and visual systems

International Edition

INTRODUCTION TO MECHATRONICS AND MEASUREMENT SYSTEMS
Third Edition
by David G. Alciatore and Michael B. Histand, Colorado State University

2007 / Hardcover / 512 pages
ISBN: 9780072963052
ISBN: 9780071254076 [IE]

www.mhhe.com/alciatore

CONTENTS

1 Introduction to Mechatronics and Measurement Systems.
2 Electric Circuits and Components.
3 Semiconductor Electronics.
4 System Response.
5 Analog Signal Processing Using Operational Amplifiers.
6 Digital Circuits and Systems.
7 Microcontroller Programming and Interfacing.
8 Data Acquisition.
9 Sensors.
10 Actuators.
11 Mechatronic Systems-Control Architectures and Case Studies.
Appendixes:
A. Measurement Fundamentals.
B. Physical Principles.
C. Mechanics of Materials.
MECHANICAL ENGINEERING

International Edition

MECHATRONICS
Principles, Concepts and Applications
by N P Mahaulik, University College of Engineering, Burla, Orissa.
2003 / 609 pages
ISBN: 9780070483743
ISBN: 9780071239240 [IE]
(McGraw-Hill India Title)
http://highered.mcgraw-hill.com/sites/0070483744

CONTENTS
1 Introduction.
2 Signal Theory and Engineering Tools.
3 Electrical Components and Electronic Devices.
4 Basics of Digital Technology.
5 Transducers and Sensors.
6 Signal Conditioning Theory, Circuits and Systems.
7 Actuators and Mechanisms.
8 Microprocessor and Microcontroller.
9 Modeling.
10 System Response.
11 Transfer Function and Frequency Response.
12 Principles of Feedback and Intelligent Control.
13 Development tools and concepts.
14 Components-based System Design and System Validation.
15 Integration.
16 Mechatronic Design Strategy : An example with High Speed Spindle.
Appendix.

International Edition

MEMS AND MICROSYSYEMS
Design and Manufacture
by Tai-Ran Hsu, San Jose State University
2002 / 512 pages
ISBN: 9780071204767 [IE]
www.mhhe.com/engcs/mech/hsu

CONTENTS
1 Overview of MEMS and Microsystems.
2 Working Principles of Microsystems.
3 Engineering Science for Microsystem Design and Fabrication.
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7 Materials for MEMS and Microsystems.
8 Microsystem Fabrication Processes.
9 Overview of Micromanufacturing.
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Appendix 1 Recommended Units for Thermophysical Quantities.
Appendix 2 Conversion of Units between SI and Imperial Systems.
MECHANICAL ENGINEERING

SCHAUM'S OUTLINE OF CONTINUUM MECHANICS
by George Mars, Michigan State University
1969 / 256 pages
ISBN: 9780070406636
(A Schaum’s Publication)

CONTENTS
1 Mathematical Foundations
2 Analysis of Stress
3 Deformation and Strain
4 Motion and Flow
5 Fundamental Laws of Continuum Mechanics
6 Linear Elasticity
7 Fluids
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Robotics

INTRODUCTION TO ROBOTICS
by Saha S K.
2008 / Softcover / 425 pages
ISBN: 9780070669000
(McGraw-Hill India Title)
http://www.mhhe.com/saha/robotics

This book on Robotics has comprehensive, up-to-date yet concise coverage of the entire course as per the requirements of the University Curriculum. Concepts have been explained in depth, in a simple and student-friendly language. Excellent approach, language, illustrations and exercises make this book a unique offering and must-have for students and teachers alike.

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1. Introduction
2. Serial Robots
3. Actuators
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5. Transformations
6. Kinematics
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8. Dynamics
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10. Control
11. Motion Planning
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Appendix C: Student Projects: Case Studies

Viscous Flow/Boundary Layer Theory

International Edition

MEMS AND MICROSYSTEMS
Design and Manufacture
by Tai-Ran Hsu, San Jose State University
2002 / 512 pages
ISBN: 9780071204767 [IE]
www.mhhe.com/engcs/mech/hsu

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1 Overview of MEMS and Microsystems.
2 Working Principles of Microsystems.
3 Engineering Science for Microsystem Design and Fabrication.
5 Thermofluid Engineering and Microsystem Design.
6 Scaling Laws in Miniaturization.
7 Materials for MEMS and Microsystems.
8 Microsystem Fabrication Processes.
9 Overview of Micromanufacturing.
10 Microsystems Design.
11 Microsystem Packaging.
Appendix 1 Recommended Units for Thermophysical Quantities.
Appendix 2 Conversion of Units between SI and Imperial Systems

International Edition

VICOSOUS FLUID FLOW
Third Edition
by Frank White, University of Rhode Island
2006 / 640 pages / Hardcover
ISBN: 9780072402315
ISBN: 9780071244930 [IE]
www.mhhe.com/white3e

CONTENTS
1 Preliminary Concepts
2 Fundamental Equations of Compressible Viscous Flow
3 Solutions of the Newtonian Viscous-Flow Equations
4 Laminar Boundary Layers
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6 Incompressible Turbulent Mean Flow
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C A Runge-Kutta Subroutine for N Simultaneous Differential Equations
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Vibrations

International Edition

FUNDAMENTALS OF VIBRATIONS
by Leonard Meirovitch, Virginia Polytechnic Institute
2001 / 816 pages / Hardcover
ISBN: 9780072881806
ISBN: 9780071181747 [IE]
www.mhhe.com/engcs/mech/meirovitch

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1 Concepts from Vibrations
2 Response of Single-Degree-of-Freedom Systems to Initial Excitations
3 Response of Single-Degree-of-Freedom Systems to Harmonic and Periodic Excitations
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6 Elements of Analytical Dynamics
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8 Distributed-Parameter Systems: Exact Solutions
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10 The Finite Element Method
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Appendix A: Fourier Series
Appendix B: Laplace Transformation
Appendix C: Linear Algebra

Professional References

THERMAL DEFORMATION IN MACHINE TOOLS
by Yoshimi Ito
2010 (June 2010) / Hardcover / 352 pages
ISBN: 9780071635172

Managing the thermal deformation is one of the key engineering tasks to achieve precision machine engineering. Commonly used numerical calculation techniques such as FEM (Finite Element Methods) could prevent some thermal deformations; however they do not resolve entire problems. In fact, the estimated results by numerical calculation could include a lot of uncertainties and show poor computing accuracy.

Even the leading manufacturers across the world suffer considerably from inaccurate calculation of the thermal deformation, and thus they need to have a practical guide book such as this book. The book is a comprehensive guidelines for mature machine tool designers. It also provides potential research subjects to academia.

CONTENTS
Chapter 1. Fundamental in Desing of Structural Body Components (Prof. Yoshimi Ito); Chapter 2. What is Thermal Deformation? (Prof. Nobuhiko Nishiwaki, U of Tokyo); Chapter 3. Structural Material and Design for Preferable Thermal Behavior (Prof. Yoshimi Ito); Chapter 4. Various Remedies for Reduction of Thermal Deformation (Prof. Hidenori Shinno, TITEC); Chapter 5. FEM Analysis for Thermal Behavior and Simulation (Prof. Michael Zah, Institut for Werkzeugmaschinen und Betriebswissenschaften, Germany); Chapter 6. Engineering Computation for Thermal Behavior and Thermal Performance Test (Nishiwaki, Ito & Lee)

SCHAUM'S OUTLINE OF MECHANICAL VIBRATIONS
by S Graham Kelly, University of Akron
1996 / 336 pages
ISBN: 9780070340411
(A Schaum’s Publication)

THEORY OF CONSTRAINTS HANDBOOK
by James F. Cox III, and John Schlierer
2010 (May 2010) / Hardcover / 768 pages
ISBN: 9780071665544

Theory of Constraints concepts and tools are aimed at one objective: bringing about a process of on-going improvement in enterprises. The application of these concepts is endless, appearing in manufacturing, project management, supply chain/distribution, marketing, sales, finance, services, engineering, government, education, medicine, prisons, banking, and services and even human relationships.

The purpose of this book is to provide hands on guidance from the world’s top experts on how to implement these TOC capabilities in various situations. This guidance is bolstered by clear cases defining how they work, why they work, what issues are resolved, and what benefits accrue.
Energy providers and policy makers will reinvent today’s centralized system, and we need to do it now.

Written by business visionary and former Motorola chairman Robert Galvin, Perfect Power shows us how to create a “perfect” system that can deliver power where needed, at an astonishing reliability standard of 99.9999999 percent. By super-charging the “Six Sigma” concepts that Galvin developed as the founder and CEO at Motorola, we can:

- Meet the energy reliability and quality needs of the Digital Age
- Generate new goods and services that create jobs, empower consumers, and lower energy cost
- Eliminate wasteful spending on our electrical infrastructure that can be used for peak power needs
- Facilitate local, regional, and, ultimately, national energy independence
- Fundamentally reduce the impact of energy on the environment
- Invest in the microgrid revolution

Energy providers and policy makers will reinvent today’s centralized...
power systems and integrate them with new, efficient “microgrids.” Investors and entrepreneurs will spot tomorrow’s hottest technologies. Consumers will demand change from “the powers that be.” And environmentalists will take advantage of cleaner, greener energy sources available.

THE STRUCTURAL ENGINEER’S PROFESSIONAL TRAINING MANUAL
by Dave K. Adams
2008 (October 2007) / 405 pages
ISBN: 9780071481076

(A Professional Reference Title)
The Business and Problem-Solving Skills Needed for Success in Your Engineering Career! The Structural Engineer’s Professional Training Manual offers a solid foundation in the real-world business and problem-solving skills needed in the engineering workplace. Filled with illustrations and practical “punch-list” summaries, this career-building guide provides an introduction to the practice and business of structural and civil engineering, including lots of detailed advice on developing competence and communicating ideas.

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Preface
Acknowledgments
Chapter 1. The Dynamics of Training
Chapter 2. The World of Professional Engineering
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Chapter 13. Understanding the Behavior of Wood Framing
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HVAC EQUATIONS, DATA, AND RULES OF THUMB
Second Edition
by Arthur Bell
2008 (September 2007) / 790 pages
ISBN: 9780071482424

(A Professional Reference Title)
The Latest Information and “Tricks of the Trade” for Achieving First-Rate HVAC Designs on Any Construction Job! HVAC Equations, Data, and Rules of Thumb presents a wealth of state-of-the-art HVAC design information and guidance, ranging from air distribution to piping systems to plant equipment. This popular reference has now been fully updated to reflect the construction industry’s new single body of codes and standards.

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Part 15. Design Conditions and Energy Conservation
Part 16. HVAC System Selection Criteria
Part 17. Air Distribution Systems
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Part 20. Glycol Piping Systems
Part 21. Steam Piping Systems
Part 22. Steam Condensate Piping Systems
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Part 24. Refrigerant Piping Systems
Part 25. Air Handling Units
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Part 29. Cooling Towers and Condensers
Part 30. Heat Exchangers
Part 31. Boilers
Part 32. Motors and Motor Controllers
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Part 35. Insulation
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Part 37. Makeup Water
Part 38. Water Treatment and Chemical Feed Systems
Part 39. Automatic Controls Building Automation Systems
Part 40. Equipment Schedules
Part 41. Equipment Manufacturers
Part 42. Building Construction Business Fundamentals
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PROJECT MANAGER'S HANDBOOK
by David L. Cleland, University of Pittsburgh and Lewis R Ireland
2008 (September 2007) / 547 pages
ISBN: 9780071484428
(A Professional Reference Title)

Project Manager’s Handbook uses industry-specific examples to demonstrate how project management principles are used throughout the industrial world to launch, manage, and execute projects.

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Acknowledgments
Introduction
Part 1: Examples of Projects Found in Specific Countries
Chapter 1: Software and Other Project Management Practices in India
Chapter 2: The Sydney 2000 Olympic Games
Chapter 3: Project Management in Aotearoa (New Zealand)
Chapter 4. An Evaluation of Major Infrastructure Projects in France: A “Project Finance” Perspective
Part 2: Examples of Projects from Specific Environments
Chapter 6. Managing Projects Financed by International Lending Agencies
Part 3: Project Management Government Organizations
Chapter 11. Elements of Successful Project Management at the National Institute of Standards and Technology
Chapter 12. Project Management Success at the Central Intelligence Agency
Part 4: Project Management Organizational Functions
Chapter 16. Legal Considerations in Managing a Nuclear Plant Decommissioning
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Part 5: Remedial Projects
Chapter 21. A Faith-Based Response to Catastrophic Disaster: An Overview of Southern Baptist Disaster Relief Planning and Logistics in Hurricane Katrina
Chapter 22. The Firefly Fiasco: A Case Study in Project Management Failure
Part 6: The Theory and Practice of Project Management
Chapter 25. Project Management in Connection to Entrepreneurship and Network Organizations
Chapter 26. Project Management Certification: Frequently Asked Questions and Experiences of the Project Management Community
Chapter 27. The Chief Architect and the Art of Project Management
Chapter 28. The Tao of Nimble Project Management: A Real World Approach
Chapter 29. Advancing Project Management Professionalism and Culture in Your Company
Chapter 30. Management by Project of the Fast-Growing Organization in Dynamic Environment
Chapter 31. Project Management Using Earned Value Management
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TROUBLESHOOTING AND REPAIR OF DIESEL ENGINES
Fourth Edition
by Paul K. Dempsey
2008 (October 2007) / Softcover / 390 pages
ISBN: 9780071493710
(A Trade & Technical Professional Title)
The Fourth Edition of Troubleshooting and Repairing Diesel Engines presents the latest advances in diesel technology. Comprehensive and practical, this revised classic equips you with all of the state-of-the-art tools and techniques needed to keep diesel engines running in top condition. Written by master mechanic and bestselling author Paul Dempsey, this hands-on resource covers new engine technology, electronic engine management, biodiesel fuels, and emissions controls. The book also contains cutting-edge information on diagnostics…fuel systems…mechanical and electronic governors…cylinder heads and valves…engine mechanics…turbochargers…electrical basics… starters and generators…cooling systems…exhaust after-treatment…and more.

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Chapter 10. Electrical Fundamentals
Chapter 11. Starting and Generating Systems
Chapter 12. Cooling systems
Chapter 13. Greener Diesels Index
QUANTITATIVE MEASUREMENTS FOR LOGISTICS
by Philip T Froom
2008 (August 2007) / 314 pages
ISBN: 9780071494151
(A Professional Reference Title)
Utilize the Latest Measurement Tools and Computations Needed to Achieve World-Class Logistics Operations in Any Organization! Quantitative Measurements for Logistics offers you a wide variety of measurement tools and computations used in today's logistics operations, ranging from life cycle costs to maintainability computations. Covering every major area of logistics, this comprehensive resource examines break-even analysis...depreciation methods...forecasting...inventory computations...learning curves...maintenance management...quality control...queuing theory...repair level analysis...statistics...failure definitions...and much more.

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MAINTENANCE ENGINEERING HANDBOOK
Seventh Edition
by Lindley R Higgins (deceased), Keith Mobley, Knoxville and Darrin J Wixoff
2008 (March 2008) / 1200 pages
ISBN: 9780071546461
(A Professional Reference Title)
The most comprehensive resource of its kind, Maintenance Engineering Handbook has long been a staple for engineers, managers, and technicians seeking current advice on everything from tools and techniques to planning and scheduling. This brand-new edition brings you up to date on the most pertinent aspects of identifying and repairing faulty equipment; such dated subjects as sanitation and housekeeping have been removed. Maintenance Engineering Handbook has been advising plant and facility professionals for more than 50 years. Whether you're new to the profession or a practiced veteran, this updated edition is an absolute necessity.

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Section 1: Organization and Management of the Maintenance Function
Section 2: Maintenance Practices
Section 3: Engineering and Analysis Tools
Section 4: Maintenance of Facilities and Equipment
Section 5: Maintenance of Mechanical Equipment
Section 6: Maintenance of Electrical Equipment
Section 7: Instrumentation and Reliability Tools
Section 8: Lubrication
Section 9: Maintenance Welding
Section 11: Chemical Corrosion Control and Cleaning

MODULAR DESIGN FOR MACHINE TOOLS
by Yoshi Ito
2008 (February 2008) / 400 pages
ISBN: 9780071496605
(A Professional Reference Title)
Machine designers and toolmakers can turn to Modular Design for Machine Tools for a complete guide to designing and building machines using modular design methods. The information and techniques presented in this skills-building book will enable readers to shorten machine design time...improve reliability...reduce costs...and simplify service and repair. Packed with over 100 detailed illustrations, this essential resource explores the basics of modular design...the methodology of machine tools...the description and application of machine tools...interfacial structural configuration in modular design...stationary and sliding joints...model theory and testing...and much more.

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MECHANICAL ENGINEERING

Joints
Appendix 1: Measurement of Interface Pressure by Means of Ultrasonic Waves
Appendix 2: Model Theory and Testing

MACHINE TOOLS HANDBOOK
by P H Joshi
2008 (September 2007) / 732 pages
ISBN: 9780071494359
(A Professional Reference Title)

Designed for quick access on the job, Machine Tools Handbook explains in detail how to carry out basic and advanced machine tool operations and functions, providing a wealth of machine tool exercises to test and improve the performance of machinists. The tables, graphs, and formulas packed into this essential reference makes it a must-have for every machine and manufacturing workshop.

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Chapter 4. Drive Transmission and Manipulation
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PUMP HANDBOOK
Fourth Edition
By Igor J Karassik (deceased), Joseph P Messina, Springfield, Paul Coper, Ingersoll-Dresser Pumps and Charles C Heald, Lincolnville
2008 (November 2007) / 1632 pages
ISBN: 978-0071460446
(A Trade & Technical Professional Title)

Long-established as the leading guide to pump design and application, the Pump Handbook has been fully revised and updated with the latest developments in pump technology. Packed with 1,150 detailed illustrations and written by a team of over 100 internationally renowned pump experts, this vital tool shows you how to select, purchase, install, operate, maintain, and troubleshoot cutting-edge pumps for all types of uses.

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Displacement Pumps
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Materials of Construction
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Pump Controls and Valves
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Installation, Operation, and Maintenance
Pump Testing
Technical Data

BUILDING INFORMATION MODELING
by Willem Kunnell
2008 (April 2008) / 416 pages
ISBN: 9780071494533
(A Professional Reference Title)

This is the first in-depth explanation of Building Information Modeling concepts, tools, and techniques as applied to both new and retrofit construction projects. By using this combination of 3D CAD (Computer Aided Design) and 4D animations, you can dramatically improve communication, coordination, and planning of construction projects while reducing risks and costs.

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Chapter 1. Introduction to BIM
Chapter 2. Simulations
Chapter 3. Tools
Chapter 4. Construction Management Education
Chapter 5. Case Studies

ELECTRICITY AND ELECTRONICS FOR HVAC
By Rex Miller and Mark R Miller
2008 (August 2007) / 380 pages
ISBN: 9780071496681
(A Professional Reference Title)

Electricity and Electronics for HVAC provides an expert account of the electric and electronic components used for modern air conditioning, heating, and refrigeration systems. Packed with hundreds of detailed illustrations, this in-depth reference fully explains circuits, diagrams, digital controls, safety procedures, troubleshooting, and more. Written by the renowned technical authors Rex Miller and Mark R. Miller, this essential resource covers all electrical and electronic principles and applications of HVAC, including basic electricity…electric measuring instruments…control devices…heating circuits…refrigeration and freezer circuits…and other topics.

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PROGRAMMING AND CUSTOMIZING THE PIC MICROCONTROLLER
Third Edition
by Myke Predko
2008 (September 2007) / Softcover / 1263 pages
ISBN: 9780071472876
(A Professional Reference Title)

Tap into the latest advancements in PIC technology with the fully re-vamped Third Edition of McGraw-Hill's Programming and Customizing the PIC Microcontroller. Long known as the subject's definitive text, this indispensable volume comes packed with more than 600 illustrations, and provides comprehensive, easy-to-understand coverage of the PIC microcontroller's hardware and software schemes. With 100 experiments, projects, and libraries, you get a firm grasp of PICs, how they work, and the ins-and-outs of their most dynamic applications.

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ENERGY SYSTEMS ENGINEERING
Evaluation and implementation
by Francis Vanek, Cornell University--Ithaca, and Louis D. Albright, Cornell University--Ithaca
2008 / Hardcover / 532 pages
ISBN: 9780071495936
(A Professional Reference Title)

An essential reference for all engineers and students working with energy systems, Energy Systems Engineering presents a systems approach to future energy needs, covering carbon-based, nuclear, and renewable energy sources. This unique guide explores the latest technology within each energy systems area, the benefits and liabilities of each, the challenges posed by changing energy supplies, the negative impacts from energy consumption, especially CO2 emissions, and the ways in which a portfolio of new technologies can address these problems.

Filled with over 200 detailed illustrations and tables, the book examines short-, medium-, and long-term energy options for the remainder of the twenty-first century. For each energy system, the authors provide equations and problems to help practitioners quantify the performance of the technology and better understand its potential.

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