# Civil Engineering

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## Environmental Engineering

### Principles of Environmental Engineering and Science, 3/e

**Mackenzie Davis**  
**Published 01/18/2013**  

Principles of Environmental Engineering is intended for a course in introductory environmental engineering for sophomore- or junior-level students. This text provides a background in fundamental science and engineering principles of environmental engineering for students who may or may not become environmental engineers. Principles places more emphasis on scientific principles, ethics, and safety, and focuses less on engineering design. The text exposes students to a broad range of environmental topics—including risk management, water quality and treatment, air pollution, hazardous waste, solid waste, and ionizing radiation as well as discussion of relevant regulations and practices. The book also uses mass and energy balance as a tool for understanding environmental engineering problems. This new edition includes an optional chapter on Biology as well as a thorough updating of environmental standards and a discussion of how those standards are created.

[www.mhhe.com/davis](http://www.mhhe.com/davis)

### Introduction to Environmental Engineering, 5/e

**Mackenzie Davis and David Cornwell**  
**Published 01/31/2012**  
ISBN: 978-0-07-132624-7 (IE)

*Introduction to Environmental Engineering, 5/e* contains the fundamental science and engineering principles needed for introductory courses and used as the basis for more advanced courses in environmental engineering. Updated with latest EPA regulations, Davis and Cornwell apply the concepts of sustainability and materials and energy balance as a means of understanding and solving environmental engineering issues. With over 720 end-of-chapter problems, as well as provocative discussion questions, and a helpful list of review items found at the end of each chapter, the text is both a comprehensible and comprehensive tool for any environmental engineering course.

[www.mhhe.com/davis](http://www.mhhe.com/davis)

## Numerical Methods

### Applied Numerical Methods W/MATLAB, 3/e

**Steven Chapra**  
**Published 01/27/2011**  

Steven Chapra’s *Applied Numerical Methods with MATLAB*, third edition, is written for engineering and science students who need to learn numerical problem solving. Theory is introduced to inform key concepts which are framed in applications and demonstrated using MATLAB. The book is designed for a one-semester or one-quarter course in numerical methods typically taken by undergraduates. The third edition features new chapters on Eigenvalues and Fourier Analysis and is accompanied by an extensive set of m-files and instructor materials.

[www.mhhe.com/chapra](http://www.mhhe.com/chapra)

## Construction Management

### Estimating Construction Costs, 6/e

**Robert Peurifoy and Garold Oberlender**  
**Published 01/18/2013**  

In preparing the sixth edition of *Estimating Construction Costs* the author has retained the fundamental concepts of estimating that have made the book successful for many years. All of the example problems have been revised with more explanations regarding assumptions used in the calculations. This edition has reorganized and consolidated chapters to increase the clarity of the subject matter for the reader. Extensive new sections have been added on equipment, including graders equipped with GPS, and methods of calculating depreciation, investment, and operating costs of construction equipment. The computer estimating chapter is revised with additional material on the use of computers in preparing estimates for bidding purposes.

[www.mhhe.com/peurifoy_oberlender6e](http://www.mhhe.com/peurifoy_oberlender6e)

## Statics & Dynamics

### Vector Mechanics for Engineers: Statics & Dynamics, 10/e

**Ferdinand P. Beer, E. Russell Johnston, Jr., David Mazurek, and Phillip J. Cornwell**  
**Published 01/12/2012**  

Continuing in the spirit of its successful previous editions, the tenth edition of *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.

www.mhhe.com/beerjohnston

Statics

Vector Mechanics for
Engineers: Statics, 10/e
Ferdinand P. Beer,
E. Russell Johnston, Jr.,
and David Mazurek
Published 01/13/2012
ISBN: 978-1-259-00792-7 (SI Metric)

Continuing in the spirit of its successful
previous editions, the tenth 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
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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.

www.mheducation.asia/olc/beerjohnston

Supplements:
• Connect Engineering
• Connect Plus Engineering

Engineering Mechanics:
Statics, 2/e
Michael Plesha, Gary Gray, and
Francesco Costanzo
Published 01/24/2012
ISBN: 978-1-259-01120-7 (SI Metric)

Based upon a great deal of classroom
teaching experience, Plesha, Gray, &
Costanzo provide a visually appealing,
"step-by-step" learning framework. The
presentation is modern, up-to-date and
student centered, and the introduction
of topics and techniques is relevant,
with examples and exercises drawn
from the world around us and emerging
technologies. Every example problem is
broken down in a consistent "step-by-
step" manner that emphasizes a "Problem
Solver's Approach" which builds from
chapter to chapter and moves from easily
solved problems to progressively more
difficult ones.

www.mhhe.com/pgc2e

Supplements:
• Connect Engineering

Dynamics

Engineering Mechanics:
Dynamics, 2/e
Michael Plesha, Gary Gray, and
Francesco Costanzo
Published 03/19/2012
ISBN: 978-0-07-734587-7

Gray, Costanzo, & Plesha's Engineering
Mechanics, 2e is the Problem Solver’s
Approach for Tomorrow’s Engineers. Based
upon a great deal of classroom teaching
experience, Gray, Costanzo, & Plesha provide a visually appealing
learning framework to your students.
The look of the presentation is modern,
like the other books the students have
experienced, and the presentation itself
is relevant, with examples and exercises
drawn from the world around us, not the world of sixty years ago. Examples are broken down in a consistent manner that promotes students’ ability to setup a problem and easily solve problems of incrementally harder difficulty. Engineering Mechanics is also accompanied by McGraw-Hill’s Connect which allows the professor to assign homework, quizzes, and tests easily and automatically grades and records the scores of the students’ work. Most problems in Connect are randomized to prevent sharing of answers and most also have a “multi-step solution” which helps move the students’ learning along if they experience difficulty.

Engineering Mechanics, 2e by Gray, Costanzo, & Plesha a new dawn for statics and dynamics.

www.mhhe.com/pgc2e

Vector Mechanics for Engineers: Dynamics, 10/e
Ferdinand P. Beer,
E. Russell Johnston, Jr., and
Phillip J. Cornwell
Published 01/12/2012

Continuing in the spirit of its successful previous editions, the tenth 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.

www.mheducation.asia/olc/beerrojohnston

Supplements:
• Connect Engineering
• Connect Plus Engineering
• COSMOS

Water Resources

Water Treatment Plant Design, 5/e
American Water Works and American Society of Civil Engineers
Published 05/21/2012

The definitive water treatment plant design reference for more than 70 years—fully updated. Thoroughly revised to include new information on sustainability, the latest technologies, and the most current standards and codes, Water Treatment Plant Design, Fifth Edition provides unsurpassed coverage of water treatment plant design topics. This authoritative resource is written by a team of water treatment plant design experts, with contributions from more than 30 international authorities. The book offers comprehensive guidance on modernizing existing water treatment facilities and planning new ones—from initial plans and permits through design, construction, and start-up.

Alternative Water Sources and Wastewater Management, 1/e
E.W. Bob Boulware
Published 09/17/2012

Alternative Water Sources and Wastewater Management explains various alternative ways of obtaining water, including rainwater catchment, solar stills, reclaiming air conditioning condensate, and bore hole design. Less polluting ways of waste management by means of composting toilets, grey water recycling, leach field gardens, new septic field design, urine recapture as fertilizer, and more are also discussed. This timely guide illustrates the limitations of existing water sources as a consequence of increased demand from an expanding world and the increased pollution of available water sources. The book gathers available knowledge from scattered sources worldwide into a condensed and coordinated source of information offering illustrations, current examples, and calculations, with the purpose of providing guidance on how to better manage this limited resource. The latest on ecologically conscious water and waste management

• A resource for cutting-edge green design techniques
• Describes rainwater catchment methods and design with installation codes from (IAPMO) International Association of Plumbing and Mechanical officials
• Illustrates off-grid systems for wastewater treatment
• Describes new net zero plumbing solutions from Europe
• Serves as a green design (LEED) technical resource for architects and engineers

Complete coverage:
Water Cycle Water Sources; Springs; Air Conditioning Condensate Recovery; Dew Harvesting; Fog Harvesting; Glacier Water Harvesting; Rainwater Catchment; Solar Water Still; Gray Water Systems; Water Quality; Ground Water Recharge; Aquatic Plants as Waste Management System; Biological Filters and Constructed Wetlands Blackwater Recycling Systems; Septic Field; Latrines and Privies; Composting Toilets

For more information or to request an examination copy contact your local sales representative or email us at mghasia_sg@mcgraw-hill.com.
Membrane Processes for Water Reuse, 1/e
Anthony Wachinski
Published 10/15/2012

Proven, cost-effective solutions to water and wastewater reuse challenges

Membrane Technologies for Water Reuse is a complete guide to membrane technology applied to water reuse/recycling. Membrane processes used in wastewater recycling include both pressure-driven and electrically driven processes. Pressure-driven processes include microfiltration, ultra filtration, and reverse osmosis. Electrically driven processes include electro dialysis reversal and electro deionization. All of these are covered in the book with examples and applications. Membrane Technologies for Water Reuse

- Covers most design and application issues
- Includes example problems that illustrate the concepts presented in the book
- Contains wastewater reuse case studies
- Helps process engineers select and size membrane processes to meet reuse water quality
- Enables regulators to make informed decisions on industrial wastewater discharge alternatives
- Assists industry plant owners in making cost-effective decisions on how to best handle discharges
- Helps municipal wastewater treatment plant managers identify reuse alternatives, recoup treatment costs, meet or exceed regulatory requirements, and make cost-effective decisions

Water Wastewater
Wastewater Engineering: Treatment and Reuse, 5/e
Metcalf & Eddy, Inc.
Published 09/06/2013
ISBN: 978-0-07-340118-8

Wastewater Engineering: Treatment and Reuse, 5/e is a thorough update of McGraw-Hill's authoritative book on wastewater treatment. No environmental engineering professional or civil or water and wastewater reuse challenges
eering major should be without a copy of this book— it describes the technological and regulatory changes that have occurred over the last ten years in this discipline, including: improved techniques for the characterization of wastewaters; improved fundamental understanding of many of the existing unit operations and processes used for wastewater treatment, especially those processes used for the biological removal of nutrients; greater implementation of several new treatment technologies (e.g., UV disinfection, membrane filtration, and heat drying); greater concern for the long term health and environmental impacts of wastewater constituents; greater emphasis on advanced wastewater treatment and risk assessment for water reuse applications; changes in regulations and the development of new technologies for wastewater disinfection; and new regulations governing the treatment, reuse, and disposal of sludge (biosolids). Greater concern for infrastructure renewal including upgrading the design and performance of wastewater treatment plants.

This revision contains a strong focus on advanced wastewater treatment technologies and stresses the reuse aspects of wastewater and biosolids.

www.mhhe.com/metcalf

Desalination Engineering Planning and Design, 1/e
Nikolay Voutchkov
Published 11/30/2012

Published with the Water Environment Federation and WateReuse Association, this is a comprehensive, one-volume engineering reference on desalination.

Desalination Engineering Planning Design and Operation covers all aspects of desalination project implementation—including planning and cost estimating, design, and equipment selection. After an overview of all key contemporary desalination technologies, the book focuses on reverse osmosis membrane desalination, which at present is the most widely applied technology for production of fresh drinking water from highly saline water sources.

- Offers theoretical principles of desalination and their practical application
- Presents a step-by-step approach for selection, design, and cost estimating of key desalination plant treatment components
- Contains examples in each chapter illustrating various technologies and their implementations
- Explains how to troubleshoot typical desalination plant operational challenges and operate desalination plants more efficiently

Safety Health and Security in Wastewater Systems, 6/e
Water Environment Federation
Published 09/03/2012

The Definitive Guide to Safety for the Wastewater Industry
Safety, Health, and Security in Wastewater Systems, Sixth Edition, provides the critical information necessary for regulatory compliance, reduction of liability, reduction of costs, and prevention of injury and illness. Complete details on biological hazards, confined space entry, personal protective equipment, safe work procedures, hazardous waste management, and other essential topics are included. The most comprehensive volume on the subject available, this Water Environment Federation resource is based on real-world experience and best work practices. Coverage includes:

- Introduction to health and safety
- Safety and health programs
- Identifying and predicting hazards
- Safety and health in wastewater treatment plant operation
- Safety and health in wastewater treatment plant maintenance
- Safety and health in sewer collections and remote locations
- Commercial and powered industrial vehicles
- Biological hazards at wastewater treatment facilities
- Hazardous materials and waste management
- Personal protective equipment
- Coordination with other agencies and officials
- Security and emergency preparedness

Supplements:


Civil Engineering Systems

Plumber’s Licensing Study Guide, 3/e
Michael Frankel and R. Woodson
Published 09/24/2012
A single book that can be used by both Master Plumbers and Journeyman Plumbers to help pass licensing exams!

Plumber’s Licensing Study Guide, Third Edition is a single-source study guide that can be used by both Master Plumbers and Journeyman Plumbers to pass licensing exams. The book contains definitions, administrative policies, procedures, and study tips and covers nomenclature, details about the various plumbing systems, and information relevant to the latest International Plumbing Code (2012). You’ll find all of the information you need, including detailed explanations, practice questions and answers, and Code alerts, to fully prepare you to take the plumber’s licensing exam—and pass it on the first try!

- Fully updated for the 2012 International Plumbing Code
- New and revised text and test questions
- Improved study tips throughout

Complete coverage of all exam topics

Trenchless Technology, 1/e
Mohammad Najafi
Published 11/16/2012
1. Introduction to Trenchless Technology and Cost Estimating and Scheduling
2. Life Cycle Cost Analysis
3. Effects of Different Project Delivery Methods on Costs and Schedule
4. Different Types of Cost Estimating and Scheduling
5. Budget Estimating
6. Quantity Takeoff
7. Preconstruction Services
8. Pricing Self-performed and subcontractor Work
10. Conventional Pipe Jacking and Utility Tunneling
11. Horizontal Auger Boring
12. Microtunneling
13. Pipe Ramming
14. Horizontal Directional Drilling
15. Pilot Tube Microtunneling
| 16. Cost Estimating and Scheduling for Existing Pipe Renewals |
| 17. CIPP |
| 18. Sliplining |
| 19. Close-fit Pipe |
| 20. Modified Sliplining |
| 21. Thermofomed Pipe |
| 22. Cost Estimating and Scheduling for Pipe Replacement Methods |
| 23. Cost Estimating and Scheduling for Manhole Renewals |
| 24. Project Closeout and Delivery Requirements |

Civil Engineering PE Practice Exams: Breadth and Depth, 1/e
Indranil Goswami
Published 01/19/2012

Presented in the Breadth and Depth format of the actual exam, this comprehensive guide is filled with hundreds of realistic practice questions based on the Principles and Practice of Civil Engineering (PE-CIVIL) exam, given by the National Council of Examiners for Engineering and Surveying (NCEES). Detailed solutions, including equations and diagrams, are provided for every question. Civil Engineering PE Practice Exams offers intensive test preparation and is the perfect companion to Civil Engineering PE All-in-One Exam Guide.

Written by leading technical professionals, known worldwide for their expertise in the planning, design, and management of airports.

Airport Systems: Planning, Design and Management, Second Edition is an in-depth guide to creating effective and efficient airports. To achieve this objective, professionals need to consider the whole problem, from the initial planning, through the design of the facilities, to the ultimate management and operation of the airport. Ideal for professionals and students alike, the book focuses on medium and large commercial airports. Major development topics include chapter-ending conclusions and mathematical exercises. This revision places the book at the forefront of current practice by adding a significant amount of new material, updating all existing content, and removing four chapters of supporting material and integrating it into the main chapters. New to This Edition
• Updated environmental regulations and international rules
• Covers new aircraft technology and traffic control
• Discusses new advances in the design, planning, and management of airports
• Contains new chapter: Aircraft Impact on Airports
• Features two new contributing authors from MIT
• In-depth presentation of the latest concepts and effective practices, provided by leading experts internationally known and sought after for their understanding and knowledge

Airport Operations, Third Edition
Provides you with everything you need to know to make an airport function smoothly. The book offers full coverage of the latest developments in this fast-changing industry. Since the second edition was published in 1996, the airport industry has undergone major changes. To address them, the book has been thoroughly updated throughout, covering the very latest in the management and operation of airports—from security to passenger and freight facilities.

• Up-to-date coverage of airport security
• International focus on new airports facilities and privatization
• Reviews online ticketing, check-in, and booking arrangements
• Emphasizes safety management based on international standards organizations such as ICAO (International Civil Aviation Organization) and IATA (International Air Transport Association)
• Discusses, for the first time, the operation of multiple facility airport systems as opposed to single airports
• Contains updated environmental impact control information

Additional Resources

Project Management in Construction, 6/e
Sidney Levy
Published 08/09/2011

Fully revised to cover the most current contract information and green building guidelines, Project Management in Construction, Sixth Edition provides project managers and general contractors with the skills necessary to run every phase of a construction job. This practical guide discusses estimating, purchasing, contract administration, team management, quality control and quality assurance, safety, and other topics essential to completing a project on time and within budget.
Civil Engineering

The Analysis of Irregular Shaped Structures: Diaphragms and Shear Walls, 1/e
R. Terry Malone and Robert Rice
Published 10/20/2011

The Construction MBA: Practical Approaches to Construction Contracting, 1/e
Matt Stevens
Published 05/28/2012
The Construction MBA: Practical Approaches to Construction Contracting clearly outlines how to manage the multiple processes that must work simultaneously to make a construction company consistently profitable. It contains proven methods that, if implemented, will make a construction firm virtually resistant to recessions and client and employee problems. Presenting a buttoned-down approach to construction contracting, this practical guide provides real-world solutions that can be applied in any construction business.

Prevention and Control of Sewer System Overflows, 3/e
Water Environment Federation
Published 07/19/2011
Fully revised throughout, this Water Environment Federation resource provides up-to-date information necessary to help managers and engineers understand and analyze an overflow problem and offers guidance on finding the most efficient, feasible, and cost-effective strategies to reduce or eliminate such overflows. This authoritative volume also serves as a planning guide for developing long-term control plans for combined sewer overflows (CSOs) and sanitary sewer overflows (SSOs).

Design of Urban Stormwater Controls, MOP 23, 2/e
Water Environment Federation
Published 05/14/2012
Design of Urban Stormwater Controls, Second Edition summarizes current practice of stormwater management in urban environments. This Manual of Practice reviews: the effects of uncontrolled runoff on receiving waters; the principles and practices of stormwater management; the institutional framework for stormwater management program implementation; design of runoff controls; cost and maintenance of those controls; methodologies for performance assessment; and analytical tools for design and evaluation.

Bridge Engineering, 3/e
Jim Zhao and Demetrios Tonias
Published 03/12/2012
Bridge Engineering, Third Edition discusses recent highway bridge design code changes in the United States. Continuing the style and essential content of the previous editions, this revision replaces dated material with new codes and focuses on Load Resistant Factor Design (LRFD). Rehabilitation, inspection, and design remain key requirements to keep bridge systems safe and functional—these are fully covered in this book. This updated volume addresses the state of art of bridge engineering, highlights major concerns, and offers explanations and solved examples for day-to-day design issues. The book is ideal as both a textbook and a reference for the needs of the bridge and highway engineering community.
General Aviation Law, 3/e
Jerry Eichenberger
Published 11/28/2011

Fully revised throughout, General Aviation Law, Third Edition, is an essential legal guide for those who work in aviation, including mechanics, pilots, aircraft owners, and aviation business owners. This practical reference answers all questions regarding aviation law in understandable layperson’s terms. The information in the book helps you to avoid legal troubles and describes what to expect if you are taken to court. Real-world case studies illustrate the topics addressed. All pertinent laws are clearly explained and clarified, providing you with the knowledge you need to understand your legal rights and protect yourself from costly litigation.

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CONNECT
McGraw-Hill Connect provides online presentation, assignment, and assessment solutions. It connects your students with the tools and resources they’ll need to achieve success. Additionally, Connect/Connect Plus content (text, tools, and homework) can be fully integrated with your Blackboard course! McGraw-Hill ConnectPlus™ includes the full textbook as an integrated, dynamic ebook. Media, animation and assessments are merged with the text’s narrative to engage students and improve learning and learning retention.

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For more information or to request an examination copy contact your local sales representative or email us at mghasia_sg@mcgraw-hill.com.
Master of Science in Environmental Engineering and Science. Graduate Certificate. Post-Master's Certificate. Demonstrate proficiency in environmental project management concepts, principles, techniques, and knowledge areas; establish a core understanding of the unique aspects of environmental project management. Apply knowledge about water science, institutions, decision-making, and financial matters to the investigation and analysis of multi-objective water quantity and quality management needs; apply theoretical principles and knowledge of historical experiences to envision how water resource management policies and activities should evolve in response to regional climatic trends and extreme events. Environmental engineering and science is concerned with the characterization and control of environmental pollution. Emphasis is placed on applying the fundamental principles of the basic engineering sciences through research and design to the solution of environmental problems in natural and engineered systems. Students may specialize in one of five focus areas: (i) Environmental Chemistry, (ii) Surface and Subsurface Processes, (iii) Nuclear Environmental Engineering and Science (NEES), (iv) Process Engineering, (v) Sustainable Systems & Environmental Assessment. Focus Areas. Environment... How environmental engineers. And environmental scientists. Work together. 1-5. Introduction to principles of Environmental engineering. And science. 1-6. 1-7. Documents Similar To principles of environmental engineering and science.pdf.