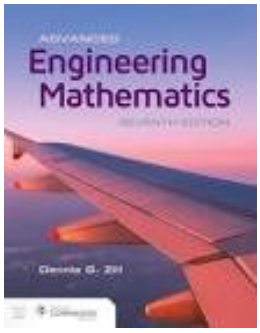
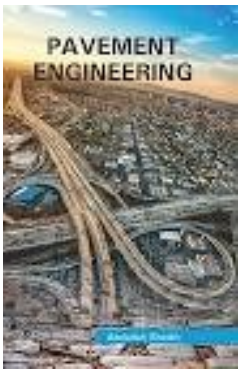


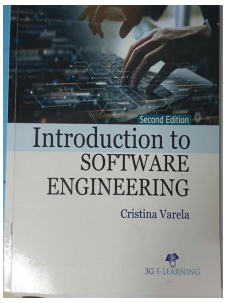
Zill, Dennis G., Advanced Engineering Mathematics 7th Edition, Philippine Edition Burlington, MA: Jones & Bartlett Learning, LLC [c2022] [CO TA 330 .Z55 2022]

In courses such as calculus or different equations, the content is fairly standardized, but the content of a course entitled engineering mathematics often varies considerably between two different academic institutions. Therefore a text entitled Advanced Engineering Mathematics is a compendium of many mathematical topics, all of which are loosely related by the expedient of either being needed or useful in courses in science and engineering or in subsequent careers in these areas. There is literally no upper bound to the number of topic that could be included in a text such as this. Consequently, this book represents the author's opinion of what constitutes engineering mathematics.



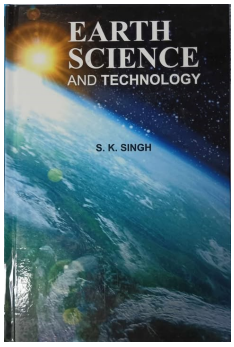
Sheikh, Abdullah, Pavement Engineering New Delhi: Random Publication LLP [c2023] [CO TE 251 .S54 2023]

Pavement engineering is a branch of civil engineering that uses engineering techniques to design and maintain flexible (asphalt) and rigid (concrete) pavements. This includes streets and highways and involves knowledge of soils, hydraulics, and materials properties. Pavement engineering involves new construction as well as rehabilitation and maintenance of existing pavements. Maintenance often involves using engineering judgment to make maintenance repairs with the highest long-term benefit and lowest cost. The Pavement Condition Index (PCI) is an example of an engineering approach applied to existing pavements. Another example is the use of a falling weights deflectometer (FWD) to non-destructively test existing pavements. Calculation of pavement layer strengths can be performed from the resulting deflection data. The two methods— empirical or mechanistic is used to determined pavement layer thicknesses. This comprehensive book covers all concepts and practices of pavements engineering in terms of materials, design , and construction methods of both flexible and rigid pavement materials and resilient infrastructure. The book is an important information guide for civil engineering students and professionals.



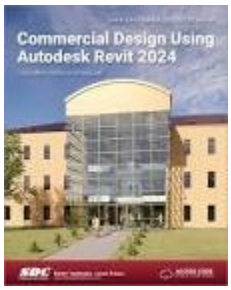
Varela, Cristina, Introduction to Software Engineering 2nd Edition New York, NY: 3G E-Learning LLC [c2024] [CO QA 76.758 .V37 2024]

Software engineering differs from other branches of engineering in that professionals are building an intangible structure and not a tangible one. Since software is embedded in the machines used in various industries, though, malfunctioning software can actually have tangible effects. With software used in everything from medical equipment to airplanes, the end result of faculty software can indeed be loss of life. When software projects require engineering, the process begins long before the product is designed—and it continues long afterward. It begins with a thorough study of the software requirements. Some requirements involve the functions the program needs to carry out. The program may, for example, need to verify that a user is authorized to access it. Other requirements involve constraints, for example, systems already in place. Software engineering covers not only the technical aspects of building software systems, but also management issues, such as directing programming teams, scheduling, and budgeting.



Singh, S.K., Earth Science and Technology New Delhi: Random Publications LLP, [c2023] [CO QE 26.2 .S56 2023]

Earth science knowledge enables us to think globally and act locally—to make sound decisions about issues important in our lives as individuals and citizen. People who understand how Earth systems work can make informed decisions about where to buy or build a home out of harm's way. They can debate and resolve issues surrounding clean water, urban planning and development, national security, global climate change, and the use and management of natural resources. Using observations from satellites, instruments on the International Space Station, airplanes, balloons, ships and on land, ESD researchers collect data about the science of our planet's atmospheric motion and composition; land cover, land use and vegetation; ocean currents, temperatures and upper-ocean life; and ice on land and sea. NASA uses cutting edge-technology from satellite sensors and airborne instruments to super computers and visualization methods to btter understand our home planet and help improve lives. This comprehensive book will be of great use of students and teachers in graduate courses on Geography and Earth Science.

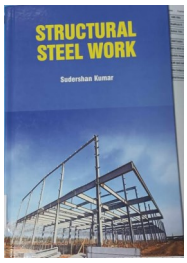


Stine, Daniel John, Commercial Design Using Autodesk Revit 2024 Mission, KS: SDC Publications, [c2023] [CO NA 2728 .S76 2023]

Commercial Design Using Autodesk Revit 2024 is designed for the architectural student using Revit 2024. The intent is to provide you with a well-rounded knowledge of tools and techniques for use in both school and industry. This text takes a project based approach to learning Revit's architectural tools in which you develop a three story office building. Each book also includes access to nearly 100 video tutorials designed to further help you master Autodesk Revit. General building codes and industry standard conventions are covered in a way that is applicable to the current exercise.

The first two chapters are intended to get you familiar with the user interface and many of the common menus and tools of Revit 2024. A small office is created in chapter two to show you just how easy it is to get started using Autodesk Revit. By the end of chapter two you will be excited and prepared to take on a much larger project.

Throughout the rest of the book you develop a three story office building. The drawings start with the floor plans and develop all the way to photo-realistic renderings like the one on the cover of this book. In these chapters many of the architectural tools and features of Revit 2024 are covered in greater detail.



Kumar, Sudershan, Structural Steel Work New Delhi, India: Venus Books, [c2023] [CO TA 684 .K86 2023]

Steel structures can be easily repaired and retrofitted to carry higher loads. Steel is also very eco-friendly material and steel structures can be easily dismantled and sold as scrap. Thus the lifecycle cost of steel structures, which includes the cost of construction, maintenance, repair, and dismantling, can be less than that for concrete structures. Since steel is produced in the factory under better quality control, steel structures have higher reliability and safety. To get the most benefit out of steel, steel structures should be designed and protected resist corrosion and fire. They should be designed and detailed for easy fabrication and erection. Good quality control to ensure proper fitting of the various structural elements. Steel is a term given to alloys containing a high proportion of iron with some carbon. Other alloying elements may also be present in varying proportions. The properties of steel are likely dependent on the proportions of alloying elements, so that their levels are closely controlled during its manufacture. The properties of steel also depend on the heat treatment of the metal. Steel is an alloy of iron and other elements such as carbon. It is one of the most commonly used materials used in the construction industry due to its proven strength and durability. Steel construction has many advantages; an excellent-to-weight ratio, the ability to join metals together easily, the ability to form efficient shapes, and so on. Structural steelwork is generally used to form a the 'skeleton' frame of a building or other built asset, typically consisting of columns and beams which are riveted, bolted or welded together. The book provides guidance for students of structural and civil engineering and is also sufficiently informative for practicing and architects who need an introduction to the Eurocodes.

Li, Zongjin, Advanced Concrete Technology 2nd Edition Hoboken, NJ: John Wiley & Sons, Inc., [c2023] [CO TP 877 .L5 2023]

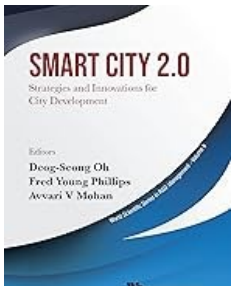
In the newly revised second edition of Advanced Concrete Technology, a distinguished team of academics and engineers delivers a state-of-the-art exploration of modern and advanced concrete technologies developed during the last decade. The book combines the essential concepts and theory of concrete with practical examples of material design, composition, processing, characterization, properties, and performance.

The authors explain, in detail, the hardware and software of concrete, and offer readers discussions of the most recent advances in concrete technology, including, but not limited to, concrete recycling, nanotechnology, microstructural simulation, additive manufacturing, and non-destructive testing methods.

This newest edition of Advanced Concrete Technology provides a sustained emphasis on sustainable and novel technologies, like new binders, 3D printing, and other advanced materials and techniques. Readers will also find:

- A thorough introduction to concrete, including its definition and its historical evolution as a material used in engineering and construction
- In-depth explorations of the materials for making concrete and the properties of fresh concrete
- Comprehensive discussions of the material structure of concrete, hardened concrete, and advanced cementitious composites
- Fulsome treatments of concrete fracture mechanics, non-destructive testing in concrete engineering, and future trends in concrete

Perfect for undergraduate and graduate students studying civil or materials engineering—especially those taking classes in the properties of concrete or concrete technologies—as well as engineers in the concrete industry. Advanced Concrete Technology, 2nd Edition will also earn a place in the libraries of civil and materials engineers working in the industry.

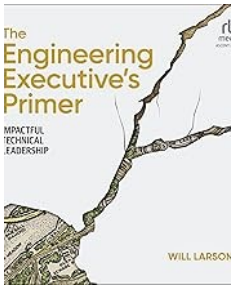


Oh, Deog-Seong, Smart City 2.0: Strategies and Innovations for City Development New Jersey: World Scientific, c2023 [CO TD 159.4 .S637 2023]

Almost a century since the idea of creating more humane — more human-centric — cities was brought to the fore, how far has mankind progressed towards creating a true 'city with a heart'? How far off are we, and what can we do to close the gap?

The first generation of smart cities showed the limits of top-down planning, in which cities contracted out design and implementation to IT providers. As residents resented paying high taxes for 'smart' urban features that they did not want or use, it became plain that smart cities were not sustainable, and needed to be re-thought. 'Smart City 2.0' starts the design process with understanding the needs of human residents. Little has yet been written about smart cities' second wind.

This book offers leading-edge, international perspectives on Smart City 2.0. It offers an overview of the sustainable smart city concept, presents leading experts' latest thinking on strategies for a new generation of smart cities, and showcases eight implementation case studies from seven countries. All chapters are contributed by prominent, leading thinkers and practitioners from a dozen countries, representing both the developed and the developing worlds.

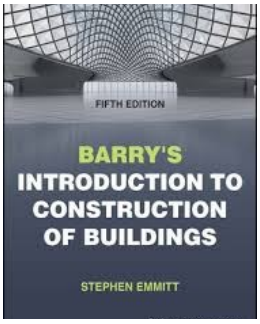


Larson, Will, The Engineering Executive's Primer: Impactful Technical Leadership
California: O'Reilly Media, Inc., c2024 [CO TA 157 .L36 2024]

As an engineering manager, you almost always have someone in your company to turn to for advice: a peer on another team, your manager, or even the head of engineering. But who do you turn to if you're the head of engineering? Engineering executives have a challenging learning curve, and many folks excitedly start their first executive role only to leave frustrated within the first eighteen months.

In this book, author Will Larson shows you ways to obtain your first executive job and quickly ramp up to meet the challenges you may not have encountered in non-executive roles: measuring engineering for both engineers and the CEO, company-scoped headcount planning, communicating successfully across a growing organization, and figuring out what people actually mean when they keep asking for a "technology strategy."

This book explains how to get an engineering executive job, negotiate the contract, and onboard at your new company; run an engineering planning process and communicate effectively with the organization; direct the core meetings necessary to operate an effective engineering organization; hire, onboard, and run performance management; manage yourself and remain effective through many challenges; and leave the job when the time is right.



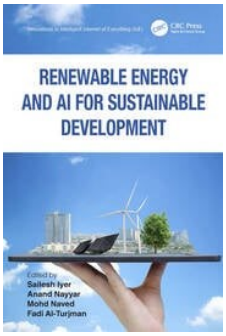
Emmitt, Stephen, Barry's Introduction to Construction of Buildings 5th Edition
Hoboken, NJ: Wiley Blackwell, c2024 [CO TH 146 E467 2024]

Barry's Introduction to Construction of Buildings provides the basic material an undergraduate student will need to understand how the majority of low-rise buildings are constructed. The text explains construction technology through key functional and performance requirements for the main elements common to all buildings. The material in the Fifth Edition has been updated to ensure it covers the latest building regulations and current construction technology, with particular attention paid to the decisions required on what and how to build to achieve a low carbon, resilient built environment. Design, technology, site assembly, and environmental issues are all covered, showing how buildings that are more efficient, with lower embodied carbon, are constructed. New 'in chapter' questions better facilitate self-reflection and learning.

Barry's Introduction to Construction of Buildings contains information on:

- General principles of construction, regulations and approvals, making choices and sources of information, and responding to climate change
- Site analysis, setup, security, bedrock and soil types, ground stability, drainage, strip, pad, and raft foundations and scaffolding
- Functional requirements for floors, including ground-supported concrete floor slabs, timber upper floors, floor finishes, and suspended timber ground floors
- Pitched roofs and their coverings, sheet metal covering to low-pitched roofs, flat roofs, thermal insulation in flat roofs, parapet walls, and green roofs

Barry's Introduction to Construction of Buildings is an ideal learning resource for undergraduate students and those working towards similar NQF level 5 and 6 qualifications in building and construction. This title is a companion to Barry's Advanced Construction of Buildings.



Iyer, Sailesh, Renewable Energy and AI for Sustainable Development Boca Raton, FL: CRC Press, c2024 [CO TJ 808 .R4172 2024]

Electronic device usage has increased considerably in the past two decades. System configurations are continuously requiring upgrades; existing systems often become obsolete in a matter of 2–3 years. Green computing is the complete effective management of design, manufacture, use, and disposal, involving as little environmental impact as possible. This book intends to explore new and innovative ways of conserving energy, effective e-waste management, and renewable energy sources to harness and nurture a sustainable eco-friendly environment.

This book:

• Highlights innovative principles and practices using effective e-waste management and disposal

• Explores artificial intelligence based sustainable models

• Discovers alternative sources and mechanisms for minimizing environmental hazards

• Highlights successful case studies in alternative sources of energy

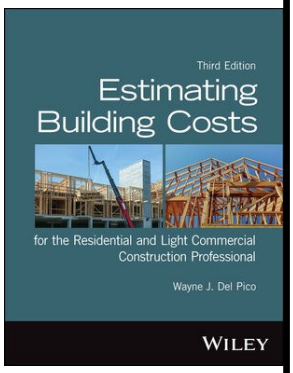
• Presents solid illustrations, mathematical equations, as well as practical in-the-field applications

• Serves as a one-stop reference guide to stakeholders in the domain of green computing, e-waste management, renewable energy alternatives, green transformational leadership including theory concepts, practice and case studies

• Explores cutting-edge technologies like internet of energy and artificial intelligence, especially the role of machine learning and deep learning in renewable energy and creating a sustainable ecosystem

• Explores futuristic trends in renewable energy

This book aims to address the increasing interest in reducing the environmental impact of energy as well as its further development and will act as a useful reference for engineers, architects, and technicians interested in and working with energy systems; scientists and engineers in developing countries; industries, manufacturers, inventors, universities, researchers, and interested consultants to explain the foundation to advanced concepts and research trends in the domain of renewable energy and sustainable computing.



Del Pico, Wayne J., Estimating Building Costs for the Residential and Light Commercial Construction Professional 3rd Edition Hoboken, NJ: John Wiley & Sons, Inc., c2023 [CO TH 435 .D355 2023]

Few aspects of a construction project are more fundamental than the cost estimate, which can mean the difference between a professionally executed project and a financial and legal disaster. Properly handled, a construction cost estimate can protect both the contractor and the client from losing money on a project. The estimate is the first step toward a successful project. For contractors, therefore, the knowledge required to construct an accurate price estimate is critical.

Estimating Building Costs for the Residential and Light Commercial Construction Professional provides this knowledge in a thorough and comprehensive guide. It takes readers step-by-step through the process of constructing a cost estimate, and provides guidance for incorporating cost estimates into budgeting, scheduling, project management, and more. The result is a fundamental guide to this critical aspect of the construction industry.