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Airline Network Planning and Scheduling - Ahmed Abdelghany 2018-11-08
A concise resource to the best practices and problem-solving ideas for understanding the airline network planning and scheduling process Airline Network Planning and Scheduling offers a comprehensive resource that is filled with the industry's best practices that can help to inform decision-modeling and the problem-solving process. Written by two industry experts, the book is designed to be an accessible guide that contains information for addressing complex challenges, problems, and approaches that arise on the job. The chapters begin by addressing the complex topics at a broad, conceptual level before moving on to more detailed modeling in later chapters. This approach follows the standard airline planning process and reflects the duties of the day-to-day job of network/schedule planners. To help gain a practical understanding of the information presented, each chapter includes exercises and data based on real-world case studies. In addition, throughout the book there are graphs and illustrations as well as, information on the most recent advances in airline network and planning research. This important resource: Takes a practical approach when detailing airline network planning and scheduling practices as opposed to a theoretical perspective Puts the focus on the complexity and main challenges as well as current practices and approaches to problem-solving and decision-making Presents the information in a logical sequence that begins with broad, conceptual topics and gradually delves into more advanced topics that address modeling Contains international standard airline planning processes, the day-to-day responsibilities of the job, and outlines the steps taken when building an airline network and schedule Includes numerous case studies, exercises, graphs, and illustrations throughout Written for professionals and academics, Airline Network Planning and Scheduling offers a resource for understanding best practices and models as well as the challenges involved with network planning and scheduling.
Digital Business Analysis - Fredrik Milani 2019-01-25
This book frames business analysis in the context of digital technologies. It introduces modern business analysis techniques, including a selection of those in the Business Analysis Body of Knowledge (BABOK) by the International Institute of Business Analysis (IIBA), and exemplifies them by means of digital technologies applied to solve problems or exploit new business opportunities. It also includes in-depth case studies in which business problems and opportunities, drawn from real-world scenarios, are mapped to digital solutions. The work is summarized in seven guiding principles that should be followed by every business analyst. This book is intended mainly for students in business informatics and related areas, and for professionals who want to acquire a solid background for their daily work. It is suitable both for courses and for self-study. Additional teaching materials such as lecture videos, slides, question bank, exams, and seminar materials are accessible on the companion web-page.
The Handbook of Behavioral Operations - Karen Donohue 2018-10-16
A comprehensive review of behavioral operations management that puts the focus on new and trending research in the field The Handbook of Behavioral Operations offers a comprehensive resource that fills the gap in the behavioral operations management literature. This vital text highlights best practices in behavioral operations research and identifies the most current research directions and their applications. A volume in the Wiley Series in Operations Research and Management Science, this book contains contributions from an international panel of scholars from a wide variety of backgrounds who are conducting behavioral research. The handbook provides succinct tutorials on common methods used to conduct behavioral research, serves as a resource for current topics in behavioral operations research, and as a guide to the use of new research methods. The authors review the fundamental theories and offer frameworks from a psychological, systems dynamics, and behavioral economic standpoint. They provide a crucial grounding for behavioral operations as well as an entry point for new areas of behavioral research. The handbook also presents a variety of behavioral operations applications that focus on specific areas of study and includes a survey of current and future research needs. This important resource: Contains a summary of the methodological foundations and in-depth treatment of research best practices in behavioral research. Provides a comprehensive review of the research conducted over the past two decades in behavioral operations, including such classic topics as inventory management, supply chain contracting, forecasting, and competitive sourcing. Covers a wide-range of current topics and applications including supply chain risk, responsible and sustainable supply chain, health care operations, culture and trust. Connects existing bodies of behavioral operations literature with related fields, including psychology and economics. Provides a vision for future behavioral research in operations. Written for academicians within the operations management community as well as for behavioral researchers, The Handbook of Behavioral Operations offers a comprehensive resource for the study of how individuals make decisions in an operational context with contributions from experts in the field.

Decision Analytics and Optimization in Disease Prevention and Treatment - Nan Kong 2018-02-02
A systematic review of the most current decision models and techniques for disease prevention and treatment Decision Analytics and Optimization in Disease Prevention and Treatment offers a comprehensive resource of the most current decision models and techniques for disease prevention and treatment. With contributions from leading experts in the field, this important resource presents information on the optimization of chronic disease prevention, infectious disease control and prevention, and disease treatment and treatment technology. Designed to be accessible, in each chapter the text presents one decision problem with the related methodology to showcase the vast applicability of operations research tools and techniques in advancing medical decision making. This vital resource features the most recent and effective approaches to the quickly growing field of healthcare decision analytics, which involves cost-effectiveness analysis, stochastic modeling, and computer simulation. Throughout the book, the contributors discuss clinical applications of modeling and optimization techniques to assist medical decision making within complex environments. Accessible and authoritative, Decision Analytics and Optimization in Disease Prevention and Treatment: Presents summaries of the state-of-the-art research that has successfully utilized both decision analytics and optimization tools within healthcare operations research Highlights the optimization of chronic disease prevention, infectious disease control and prevention, and disease treatment and treatment technology Includes contributions by well-known experts from operations researchers to clinical researchers, and from data scientists to public health administrators Offers clarification on common misunderstandings and misnomers while shedding light on new approaches in this growing area Designed for use by academics, practitioners, and researchers, Decision Analytics and Optimization in Disease Prevention and Treatment offers a comprehensive resource for accessing the power of decision analytics and optimization tools within healthcare operations research.
Proceeding of the VI International Ship Design & Naval Engineering Congress (CIDIN) and XXVI Pan-American Congress of Naval Engineering, Maritime Transportation and Port Engineering (COPINAVAL) - Vice Admiral Jorge Enrique Carreño Moreno 2020-03-10
This book presents the proceedings of CIDIN and COPINAVAL. The papers present the development of the navy, maritime and riverine industry, contributing to the scientific and technological progress and development in the sector. In 2019 the congresses occurred in Cartagena, Colombia, a reference for science and technology innovation for Latin-American naval industry.
Meta-heuristic and Evolutionary Algorithms for Engineering Optimization - Omid Bozorg-Haddad 2017-10-09
A detailed review of a wide range of meta-heuristic and evolutionary algorithms in a systematic manner and how they relate to engineering optimization problems This book introduces the main metaheuristic algorithms and their applications in optimization. It describes 20 leading meta-heuristic and evolutionary algorithms and presents discussions and assessments of their performance in solving optimization problems from several fields of engineering. The book features clear and concise principles and presents detailed descriptions of leading methods such as the pattern search (PS) algorithm, the genetic algorithm (GA), the simulated annealing (SA) algorithm, the Tabu search (TS) algorithm, the ant colony optimization (ACO), and the particle swarm optimization (PSO) technique. Chapter 1 of Meta-heuristic and Evolutionary Algorithms for Engineering Optimization provides an overview of optimization and defines it by presenting examples of optimization problems in different engineering domains. Chapter 2 presents an introduction to meta-heuristic and evolutionary algorithms and links them to engineering problems. Chapters 3 to 22 are each devoted to a separate algorithm– and they each start with a brief literature review of the development of the algorithm, and its applications to engineering problems. The principles, steps, and execution of the algorithms are described in detail, and a pseudo code of the algorithm is presented, which serves as a guideline for coding the algorithm to solve specific applications. This book: Introduces state-of-the-art metaheuristic algorithms and their applications to engineering optimization; Fills a gap in the current literature by compiling and explaining the various meta-heuristic and evolutionary algorithms in a clear and systematic manner; Provides a step-by-step presentation of each algorithm and guidelines for practical implementation and coding of algorithms; Discusses and assesses the performance of metaheuristic algorithms in multiple problems from many fields of engineering; Relates optimization algorithms to engineering problems employing a unifying approach. Meta-heuristic and Evolutionary Algorithms for Engineering Optimization is a reference intended for students, engineers, researchers, and instructors in the fields of industrial engineering, operations research, optimization/mathematics, engineering optimization, and computer science. OMID BOZORG-HADDAD, PhD, is Professor in the Department of Irrigation and Reclamation Engineering at the University of Tehran, Iran. MOHAMMAD SOLGI, M.Sc., is Teacher Assistant for M.Sc. courses at the University of Tehran, Iran. HUGO A. LOÁICIGA, PhD, is Professor in the Department of Geography at the University of California, Santa Barbara, United States of America.
How to Estimate with RSMeans Data - RSMeans 2020-03-31
A practical, hands-on guide to real-world construction estimating How to Estimate with RSMeans Data is the only instructional book on construction cost estimating that uses the most popular source of construction cost data, RS Means. This updated fifth edition includes new coverage on the role of Building Information Modeling (BIM) in the estimating process, and over 300 sample problems and exercises that show you how to apply cost data to your building project based on the RS Means 2015 Building Construction Cost Data. The companion website provides access to RS Means CostWorks data, allowing you to use real-world numbers in your practice estimates, and the included Instructor's Manual provides step-by-step solutions to problems in the book. Focused on the practical aspects of estimating, this book emphasizes the application of estimating techniques–which are transferable to any estimating software–through problem solving and the ground-up creation of complete construction project estimates. Estimating skills are fundamental to the construction industry, and are applied by all parties at all levels throughout the industry. This book is a hands-on guide to the techniques and tools used to create a thorough estimate, with plenty of opportunities for practice. Apply cost data to all aspects of the building project Practice your skills on over 300 sample problems Construct a complete estimate using RSMeans Besides being an essential construction skill, learning estimating helps you become familiar with reading and understanding construction blueprints and how construction assemblies are built. Mastery of these vital skills is important to your future career, and How to Estimate with RSMeans Data is your ideal guide to a solid foundation.
Architect's Essentials of Cost Management - Michael D. Dell'Isola 2002-11-22
Written by a cost-control expert with more than thirty years of design and building expertise, this volume in the Professional Practice Essentials Series gives you practical, user-friendly guidance on how to better

manager costs through all phases of a project. Dell'Isola first explains the basics of cost management-from estimating costs during the design phase to managing costs during construction and even after occupancy. He then covers all of the tools and techniques available to architects/designers and explains how best to use them. A number of useful case studies clearly show how the author's principles work in real-life situations.

MEMS Product Development - Alissa M. Fitzgerald 2021-03-16

Drawing on their experiences in successfully executing hundreds of MEMS development projects, the authors present the first practical guide to navigating the technical and business challenges of MEMS product development, from the initial concept stage all the way to commercialization. The strategies and tactics presented, when practiced diligently, can shorten development timelines, help avoid common pitfalls, and improve the odds of success, especially when resources are limited. MEMS Product Development illuminates what it really takes to develop a novel MEMS product so that innovators, designers, entrepreneurs, product managers, investors, and executives may properly prepare their companies to succeed.

Economic and Cost Analysis For Operations and Project Managers - 2nd Edition - Mahmoud A. Al-Odeh 2020-08-14

Cost Estimation - Gregory K. Mislick 2015-05-04

Presents an accessible approach to the cost estimation tools, concepts, and techniques needed to support analytical and cost decisions Written with an easy-to-understand approach, Cost Estimation: Methods and Tools provides comprehensive coverage of the quantitative techniques needed by professional cost estimators and for those wanting to learn about this vibrant career field. Featuring the underlying mathematical and analytical principles of cost estimation, the book focuses on the tools and methods used to predict the research and development, production, and operating and support costs for successful cost estimation in industrial, business, and manufacturing processes. The book begins with a detailed historical perspective and key terms of the cost estimating field in order to develop the necessary background prior to implementing the presented quantitative methods. The book proceeds to fundamental cost estimation methods utilized in the field of cost estimation, including working with inflation indices, regression analysis, learning curves, analogies, cost factors, and wrap rates. With a step-by-step introduction to the practicality of cost estimation and the available resources for obtaining relevant data, Cost Estimation: Methods and Tools also features: Various cost estimating tools, concepts, and techniques needed to support business decisions Multiple questions at the end of each chapter to help readers obtain a deeper understanding of the discussed methods and techniques An overview of the software used in cost estimation, as well as an introduction to the application of risk and uncertainty analysis A Foreword from Dr. Douglas A. Brook, a professor in the Graduate School of Business and Public Policy at the Naval Postgraduate School, who spent many years working in the Department of Defense acquisition environment Cost Estimation: Methods and Tools is an excellent reference for academics and practitioners in decision science, operations research, operations management, business, and systems and industrial engineering, as well as a useful guide in support of professional cost estimation training and certification courses for practitioners. The book is also appropriate for graduate-level courses in operations research, operations management, engineering economics, and manufacturing and/or production processes.

Total Cost Analysis in Logistics - Björn Oskarsson 2019-11-01

Cost is considered a crucial factor in much decision-making in private and public organisations. Therefore, the ability to calculate total estimated costs for different alternatives is important. However, such total cost analysis is a challenging task. Providing students with the knowledge and skills needed for total cost analysis is therefore relevant in several disciplines within higher education. Within logistics management, total cost analysis is for decades by several scholars regarded as a ‘cornerstone’, a fundamental part of the discipline. However, except for describing the basic steps and presumptions, the literature does not give much support concerning how to conduct such analyses, or which the difficulties associated with total cost analysis are. This blank space in literature is not limited to the logistics discipline, it stretches throughout many disciplines. Neither does literature cover how to teach to support students’ learning of total cost analysis. Hence, to address the lack of research, the purpose of this thesis was formulated as follows: To contribute to the understanding of conducting, learning, and teaching total cost analysis. Three research questions were shaped to address each part of the purpose: conducting, learning and teaching. RQ1 What challenges are connected to the process of conducting total cost analysis? RQ2 What thresholds are there for learning how to conduct total cost analysis? RQ3 How can total cost learning be supported by suitable educational methods? The research questions are connected to each other in the sense that the challenges of conducting total cost analysis (RQ1) indicate within which areas total cost learning is difficult, and thereby where thresholds are to be investigated (RQ2). Further, knowledge about the learning thresholds is needed to discuss suitable educational activities (RQ3). The research was conducted by a combination of literature reviews and multiple case studies at four Higher Education Institutions, where both teachers and students were approached. The findings for RQ1 were developed in an abductive procedure walking back and forth between literature and cases. A twelve-step process for total cost analysis was defined, and specific challenges associated for each of these steps. Regarding learning thresholds (RQ2), perceived difficulties with learning total cost analysis were identified in the case studies. These difficulties were then analysed against threshold characteristics available in literature. This resulted in the identification of four total cost learning thresholds. Literature on constructivist-based teaching was used to suggest teaching methods to support learning (RQ3). These types of activities proved to match the ones most appreciated by teachers and students in the studied cases. The twelve-step process provides a more structured and holistic view of total cost analysis than previously available in the logistics literature. The description of challenges with conducting total cost analysis is novel, not only within logistics, but also generally, why this is a major contribution from this research. Aspects regarding teaching and learning connected to logistics, and to total cost analysis, are very sparsely addressed in literature, which makes the findings concerning learning thresholds and teaching methods valuable. The findings are believed to be useful for different stakeholders. First and foremost, teachers can use the findings for designing programs, courses, and course modules which cover the important aspects of total cost analysis with help from educational activities supporting the students’ learning. Second, for organisations where total cost analyses are conducted, the suggested process with its steps and associated challenges can be used to achieve better total cost analyses, and in turn more substantiated decisions. In the longer perspective, better education

on total cost analysis at Higher Education Institutions will further strengthen the total cost competence in organisations, thereby improving the total cost-related decision making. Total cost analysis is not unique for the logistics discipline. Although focus in the study has been on Higher Education Institutions providing logistics courses, the findings are to a high extent believed to be relevant also for other disciplines dealing with total cost analysis.

Elements of Random Walk and Diffusion Processes - Oliver C. Ibe 2013-08-29

Presents an important and unique introduction to random walk theory Random walk is a stochastic process that has proven to be a useful model in understanding discrete-state discrete-time processes across a wide spectrum of scientific disciplines. Elements of Random Walk and Diffusion Processes provides an interdisciplinary approach by including numerous practical examples and exercises with real-world applications in operations research, economics, engineering, and physics. Featuring an introduction to powerful and general techniques that are used in the application of physical and dynamic processes, the book presents the connections between diffusion equations and random motion. Standard methods and applications of Brownian motion are addressed in addition to Levy motion, which has become popular in random searches in a variety of fields. The book also covers fractional calculus and introduces percolation theory and its relationship to diffusion processes. With a strong emphasis on the relationship between random walk theory and diffusion processes, Elements of Random Walk and Diffusion Processes features: Basic concepts in probability, an overview of stochastic and fractional processes, and elements of graph theory Numerous practical applications of random walk across various disciplines, including how to model stock prices and gambling, describe the statistical properties of genetic drift, and simplify the random movement of molecules in liquids and gases Examples of the real-world applicability of random walk such as node movement and node failure in wireless networking, the size of the Web in computer science, and polymers in physics Plentiful examples and exercises throughout that illustrate the solution of many practical problems Elements of Random Walk and Diffusion Processes is an ideal reference for researchers and professionals involved in operations research, economics, engineering, mathematics, and physics. The book is also an excellent textbook for upper-undergraduate and graduate level courses in probability and stochastic processes, stochastic models, random motion and Brownian theory, random walk theory, and diffusion process techniques.

Healthcare Analytics - Hui Yang 2016-10-10

Features of statistical and operational research methods and tools being used to improve the healthcare industry With a focus on cutting-edge approaches to the quickly growing field of healthcare, Healthcare Analytics: From Data to Knowledge to Healthcare Improvement provides an integrated and comprehensive treatment on recent research advancements in data-driven healthcare analytics in an effort to provide more personalized and smarter healthcare services. Emphasizing data and healthcare analytics from an operational management and statistical perspective, the book details how analytical methods and tools can be utilized to enhance healthcare quality and operational efficiency. Organized into two main sections, Part I features biomedical and health informatics and specifically addresses the analytics of genomic and proteomic data; physiological signals from patient-monitoring systems; data uncertainty in clinical laboratory tests; predictive modeling; disease modeling for sepsis; and the design of cyber infrastructures for early prediction of epidemic events. Part II focuses on healthcare delivery systems, including system advances for transforming clinic workflow and patient care; macro analysis of patient flow distribution; intensive care units; primary care; demand and resource allocation; mathematical models for predicting patient readmission and postoperative outcome; physician–patient interactions; insurance claims; and the role of social media in healthcare. Healthcare Analytics: From Data to Knowledge to Healthcare Improvement also features: • Contributions from well-known international experts who shed light on new approaches in this growing area • Discussions on contemporary methods and techniques to address the handling of rich and large-scale healthcare data as well as the overall optimization of healthcare system operations • Numerous real-world examples and case studies that emphasize the vast potential of statistical and operational research tools and techniques to address the big data environment within the healthcare industry • Plentiful applications that showcase analytical methods and tools tailored for successful healthcare systems modeling and improvement The book is an ideal reference for academics and practitioners in operations research, management science, applied mathematics, statistics, business, industrial and systems engineering, healthcare systems, and economics. Healthcare Analytics: From Data to Knowledge to Healthcare Improvement is also appropriate for graduate-level courses typically offered within operations research, industrial engineering, business, and public health departments.

Cost Estimator's Reference Manual - Rodney D. Stewart 1995-04-03

In today's hypercompetitive global marketplace, accurate costestimating is crucial to bottom-line results. Nowhere is this moreevident than in the design and development of new products andservices. Among managing engineers responsible for developingrealistic cost estimates for new product designs, the number-onesource of information and guidance has been the Cost Estimator'sReference Manual. Comprehensive, authoritative, and practical, the Manual instructsreaders in the full range of cost estimating techniques andprocedures currently used in the fields of development, testing,manufacturing, production, construction, software, generalservices, government contracting, engineering services, scientificprojects, and proposal preparation. The authors clearly explain howto go about gathering the data essential to preparing a realisticestimate of costs and guide the reader step by step through eachprocedure. This new Second Edition incorporates a decade of progress in themethods, procedures, and strategies of cost estimating. All thematerial has been updated and five new chapters have been added toreflect the most recent information on such increasingly importanttopics as activity-based costing, software estimating,design-to-cost techniques, and cost implications of new concurrentengineering and systems engineering approaches to projects. Indispensable to virtually anyone whose work requires accurate costestimates, the Cost Estimator's Reference Manual will be especiallyvaluable to engineers, estimators, accountants, and contractors ofproducts, projects, processes, and services to both government andindustry. The essential ready-reference for the techniques, methods, andprocedures of cost estimating COST ESTIMATOR'S REFERENCE MANUAL Second Edition Indispensable for anyone who depends on accurate cost estimates forengineering projects, the Cost Estimator's Reference Manual guidesthe user through both the basic and more sophisticated aspects ofthe estimating process. Authoritative and comprehensive, the Manualseamlessly integrates the many functions--accounting, financial,statistical, and management--of modern cost estimating practice.Its broad coverage includes estimating procedures applied to suchareas as: * Production * Software * Development * General services * Testing * Government contracting * Manufacturing *

Engineering * Proposal preparation * Scientific projects * Construction This updated and expanded Second Edition incorporates all the mostimportant recent developments in cost estimating, such asactivity-based costing, software estimating, design-to-costtechniques, computer-aided estimating tools, concurrentengineering, and life cycle costing. For engineers, estimators, accountants, planners, and others whoare involved in the cost aspects of projects, the Cost Estimator'sReference Manual is an invaluable information source that will payfor itself many times over.

Feature Papers of Forecasting - Sonia Leva 2021-08-06

Nowadays, forecast applications are receiving unprecedent attention thanks to their capability to improve the decision-making processes by providing useful indications. A large number of forecast approaches related to different forecast horizons and to the specific problem that have to be predicted have been proposed in recent scientific literature, from physical models to data-driven statistic and machine learning approaches. In this Special Issue, the most recent and high-quality researches about forecast are collected. A total of nine papers have been selected to represent a wide range of applications, from weather and environmental predictions to economic and management forecasts. Finally, some applications related to the forecasting of the different phases of COVID in Spain and the photovoltaic power production have been presented.

Estimating Building Costs for the Residential and Light Commercial Construction Professional - Wayne J. Del Pico 2012-04-03

How to succeed in the construction business—step-by-step guidelines for estimating To be competitive, contractors and homebuilders need to know how to generate complete, accurate estimates for labor and material costs. This book guides readers through the entire estimating process, explaining in detail how to put together a reliable estimate that can be used not only for budgeting, but also for developing a schedule, managing a project, dealing with contingencies, and ultimately making a profit. Completely revised and updated to reflect the new CSI MasterFormat 2010TM system, the Second Edition of this practical guide describes estimating techniques for each building system and how to apply them according to the latest industry standards. Cost considerations and quantity takeoff and pricing are included for virtually every type of work found in residential and light commercial projects, from demolition, concrete, and masonry to windows and doors, siding, roofing, mechanical and electrical systems, finish work, and site construction. Complete with many new graphics and references to professional construction cost databases, the new edition provides experienced contractors and novices alike with essential information on: How to correctly interpret plans and specifications, reflecting updates to contract documents since the first edition Computer estimating techniques and new estimating software for performing quantity takeoff The best methods for conceptual estimating as well as the extremely useful topic of parametric estimating How to allocate the right amounts for profit and contingencies, and other hard-to-find professional guidance How a unit price estimate is built along with labor issues and budgeting for subcontractor work

Cost and Optimization in Government - Aman Khan 2022-03-31

The careful management of costs and operations are two of the most essential elements for successful operation of any organization – public, private, or nonprofit. This book demonstrates that a good grounding in cost basics, especially those related to cost accounting, operations management, and quality control can help all organizations, in particular government, increase efficiency, improve performance, and, in the end, do a better job of running its everyday operation. The book is divided into three parts: Part I offers thorough coverage of cost fundamentals, with an emphasis on basic cost concepts, cost behavior, cost analysis, cost assignment, cost allocation, and cost control. Part II deals with optimization in government. Included in this part are traditional or classical optimization with applications in inventory management and queuing, followed by mathematical programming, network analysis, productivity measurement, and games and decisions. Finally, Part III deals with a special case in cost and optimization that has become important in recent years – quality control. Simple, accessible language and explanations are integrated throughout, and examples have been drawn from government so that readers can easily relate to them. Cost and Optimization is required reading for practicing public managers and students of public administration in need of a clear, concise guide to efficient use of public resources.

Decision Science for Housing and Community Development - Michael P. Johnson 2015-09-28

A multidisciplinary approach to problem-solving in community-based organizations using decision models and operations research applications A comprehensive treatment of public-sector operations research and management science, Decision Science for Housing and Community Development: Localized and Evidence-Based Responses to Distressed Housing and Blighted Communities addresses critical problems in urban housing and community development through a diverse set of decision models and applications. The book represents a bridge between theory and practice and is a source of collaboration between decision and data scientists and planners, advocates, and community practitioners. The book is motivated by the needs of community-based organizations to respond to neighborhood economic and social distress, represented by foreclosed, abandoned, and blighted housing, through community organizing, service provision, and local development. The book emphasizes analytic approaches that increase the ability of local practitioners to act quickly, thoughtfully, and effectively. By doing so, practitioners can design and implement responses that reflect stakeholder values associated with healthy and sustainable communities; that benefit from increased organizational capacity for evidence-based responses; and that result in solutions that represent improvements over the status quo according to multiple social outcome measures. Featuring quantitative and qualitative analytic methods as well as prescriptive and exploratory decision modeling, the book also includes: Discussions of the principles of decision theory and descriptive analysis to describe ways to identify and quantify values and objectives for community development Mathematical programming applications for real-world problem solving in foreclosed housing acquisition and redevelopment Applications of case studies and community-engaged research principles to analytics and decision modeling Decision Science for Housing and Community Development: Localized and Evidence-Based Responses to Distressed Housing and Blighted Communities is an ideal textbook for upper-undergraduate and graduate-level courses in decision models and applications; humanitarian logistics; nonprofit operations management; urban operations research; public economics; performance management; urban studies; public policy; urban and regional planning; and systems design and optimization. The book is also an excellent reference for academics, researchers, and practitioners in operations research, management science, operations management, systems engineering, policy analysis, city planning, and data analytics.

Principles of Sequencing and Scheduling - Kenneth R. Baker 2018-11-06

An updated edition of the text that explores the core

topics in scheduling theory The second edition of Principles of Sequencing and Scheduling has been revised and updated to provide comprehensive coverage of sequencing and scheduling topics as well as emerging developments in the field. The text offers balanced coverage of deterministic models and stochastic models and includes new developments in safe scheduling and project scheduling, including coverage of project analytics. These new topics help bridge the gap between classical scheduling and actual practice. The authors—noted experts in the field—present a coherent and detailed introduction to the basic models, problems, and methods of scheduling theory. This book offers an introduction and overview of sequencing and scheduling and covers such topics as single-machine and multi-machine models, deterministic and stochastic problem formulations, optimization and heuristic solution approaches, and generic and specialized software methods. This new edition adds coverage on topics of recent interest in shop scheduling and project scheduling. This important resource: Offers comprehensive coverage of deterministic models as well as recent approaches and developments for stochastic models Emphasizes the application of generic optimization software to basic sequencing problems and the use of spreadsheet-based optimization methods Includes updated coverage on safe scheduling, lognormal modeling, and job selection Provides basic coverage of robust scheduling as contrasted with safe scheduling Adds a new chapter on project analytics, which supports the PERT21 framework for project scheduling in a stochastic environment. Extends the coverage of PERT 21 to include hierarchical scheduling Provides end-of-chapter references and access to advanced Research Notes, to aid readers in the further exploration of advanced topics Written for upper-undergraduate and graduate level courses covering such topics as scheduling theory and applications, project scheduling, and operations scheduling, the second edition of Principles of Sequencing and Scheduling is a resource that covers scheduling techniques and contains the most current research and emerging topics.

Electrical Estimating Methods - Wayne J. Del Pico 2014-11-17

Simplify the estimating process with the latest data, materials, and practices Electrical Estimating Methods, Fourth Edition is a comprehensive guide to estimating electrical costs, with data provided by leading construction database RS Means. The book covers the materials and processes encountered by the modern contractor, and provides all the information professionals need to make the most precise estimate. The fourth edition has been updated to reflect the changing materials, techniques, and practices in the field, and provides the most recent Means cost data available. The complexity of electrical systems can make accurate estimation difficult, but this guide contains all the necessary information in one place. An electrical estimate represents the total cost for materials, labor, overhead and profit, but accuracy is virtually impossible without a basic knowledge of the field, and real-world experience in the type of work required. Inaccurate estimates lead to problems with customer satisfaction, which often create payment issues. A thorough, complete, and accurate estimate is in the best interest of all parties involved in the work. Electrical Estimating Methods provides more than just data. Detailed discussions about the work itself help highlight factors that may escape notice, and access to the latest cost data helps tie everything together. Features include: Discussion of current equipment, materials, and processes Means data for both residential and commercial projects Case studies that illustrate best practices Online access to the latest Means data for fast access on the job The book discusses specific situations as well as general practices, and provides comprehensive guidance to the creation of a true, current, estimation of costs. For electrical contractors and estimators, Electrical Estimating Methods contains must-have content that simplifies the estimating process.

International Scientific Siberian Transport Forum TransSiberia - 2021 - Aleksey Manakov 2022-03-17

This book presents innovations in the field of high-speed rail technology, hyperloop transportation technologies and Maglev system, information and communication technology (ICT) for intelligent transportation systems (ITS), multimodal transportation, sustainable freight transportation, and others. The papers presented in the book are proceedings of the annual scientific forum “TransSiberia”, which is the foremost Russian transport event that focuses on innovations in rail transport. The book also presents research in the field of railway engineering, health monitoring, inspection, NDT&E, and signal processing. Developments in the field of decarbonization of railway transport and new types of fuel as an alternative to electrification are proposed. The issues of sustainable operation and maintenance of railway systems and sustainable freight transportation, such as digitalization and AI technologies for sustainable asset management, operation, and maintenance of railway systems, have received a lot of research attention. The book serves as a medium for railroad academia and industry to exchange new ideas and share the latest achievements, as well as to continue supporting the productivity of the transport industry in a sustainable manner.

Advances in DEA Theory and Applications - Kaoru Tone 2017-04-12

A key resource and framework for assessing the performance of competing entities, including forecasting models Advances in DEA Theory and Applications provides a much-needed framework for assessing the performance of competing entities with special emphasis on forecasting models. It helps readers to determine the most appropriate methodology in order to make the most accurate decisions for implementation. Written by a noted expert in the field, this text provides a review of the latest advances in DEA theory and applications to the field of forecasting. Designed for use by anyone involved in research in the field of forecasting or in another application area where forecasting drives decision making, this text can be applied to a wide range of contexts, including education, health care, banking, armed forces, auditing, market research, retail outlets, organizational effectiveness, transportation, public housing, and manufacturing. This vital resource: Explores the latest developments in DEA frameworks for the performance evaluation of entities such as public or private organizational branches or departments, economic sectors, technologies, and stocks Presents a novel area of application for DEA; namely, the performance evaluation of forecasting models Promotes the use of DEA to assess the performance of forecasting models in a wide area of applications Provides rich, detailed examples and case studies Advances in DEA Theory and Applications includes information on a balanced benchmarking tool that is designed to help organizations examine their assumptions about their productivity and performance.

RSMeans Plumbing Estimating Methods - Joseph J. Galeno 2003-12-22

Now in its third edition, this estimating guide offers comprehensive coverage of all aspects of plumbing: Residential, commercial, industrial, and medical systems The most common plumbing materials and methods, subsystems and components Pricing quantities for an estimate and calculating markup Preparing bids Best techniques for using Means Plumbing Cost Data Sample

takeoff and estimate forms Includes special sections on change order analysis, estimating for additions, and alterations to existing systems. Also covers budget and assemblies estimating. A complete sample estimate shows you how to perform each step in the estimating process, making it easy to follow the authors' methods.

Environmental Assessment on Energy and Sustainability by Data Envelopment Analysis - Toshiyuki Sueyoshi 2018-03-19

Introduces a bold, new model for energy industry pollution prevention and sustainable growth Balancing industrial pollution prevention with economic growth is one of the knottiest problems faced by industry today. This book introduces a novel approach to using data envelopment analysis (DEA) as a powerful tool for achieving that balance in the energy industries—the world's largest producers of greenhouse gases. It describes a rigorous framework that integrates elements of the social sciences, corporate strategy, regional economics, energy economics, and environmental policy, and delivers a methodology and a set of strategies for promoting green innovation while solving key managerial challenges to greenhouse gas reduction and business growth. In writing this book the authors have drawn upon their pioneering work and considerable experience in the field to develop an unconventional, holistic approach to using DEA to assess key aspects of sustainability development. The book is divided into two sections, the first of which lays out a conventional framework of DEA as the basis for new research directions. In the second section, the authors delve into conceptual and methodological extensions of conventional DEA for solving problems of environmental assessment in all contemporary energy industry sectors. Introduces a powerful new approach to using DEA to achieve pollution prevention, sustainability, and business growth Covers the fundamentals of DEA, including theory, statistical models, and practical issues of conventional applications of DEA Explores new statistical modeling strategies and explores their economic and business implications Examines applications of DEA to environmental analysis across the complete range of energy industries, including coal, petroleum, shale gas, nuclear energy, renewables, and more Summarizes important studies and nearly 800 peer reviewed articles on energy, the environment, and sustainability Environmental Assessment on Energy and Sustainability by Data Envelopment Analysis is must-reading for researchers, academics, graduate students, and practitioners in the energy industries, as well as government officials and policymakers tasked with regulating the environmental impacts of industrial pollution.

Decision Making in Systems Engineering and Management - Gregory S. Parnell 2011-03-16

Decision Making in Systems Engineering and Management is a comprehensive textbook that provides a logical process and analytical techniques for fact-based decision making for the most challenging systems problems. Grounded in systems thinking and based on sound systems engineering principles, the systems decisions process (SDP) leverages multiple objective decision analysis, multiple attribute value theory, and value-focused thinking to define the problem, measure stakeholder value, design creative solutions, explore the decision trade off space in the presence of uncertainty, and structure successful solution implementation. In addition to classical systems engineering problems, this approach has been successfully applied to a wide range of challenges including personnel recruiting, retention, and management; strategic policy analysis; facilities design and management; resource allocation; information assurance; security systems design; and other settings whose structure can be conceptualized as a system.

Data Analysis and Applications 1 - Christos H. Skiadas 2019-05-21

This series of books collects a diverse array of work that provides the reader with theoretical and applied information on data analysis methods, models, and techniques, along with appropriate applications. Volume 1 begins with an introductory chapter by Gilbert Saporta, a leading expert in the field, who summarizes the developments in data analysis over the last 50 years. The book is then divided into three parts: Part 1 presents clustering and regression cases; Part 2 examines grouping and decomposition, GARCH and threshold models, structural equations, and SME modeling; and Part 3 presents symbolic data analysis, time series and multiple choice models, modeling in demography, and data mining.

Applied Risk Analysis for Guiding Homeland Security Policy and Decisions - Samrat Chatterjee 2021-02-24

Presents various challenges faced by security policy makers and risk analysts, and mathematical approaches that inform homeland security policy development and decision support Compiled by a group of highly qualified editors, this book provides a clear connection between risk science and homeland security policy making and includes top-notch contributions that uniquely highlight the role of risk analysis for informing homeland security policy decisions. Featuring discussions on various challenges faced in homeland security risk analysis, the book seamlessly divides the subject of risk analysis for homeland security into manageable chapters, which are organized by the concept of risk-informed decisions, methodology for applying risk analysis, and relevant examples and case studies. Applied Risk Analysis for Guiding Homeland Security Policy and Decisions offers an enlightening overview of risk analysis methods for homeland security. For instance, it presents readers with an exploration of radiological and nuclear risk assessment, along with analysis of uncertainties in radiological and nuclear pathways. It covers the advances in risk analysis for border security, as well as for cyber security. Other topics covered include: strengthening points of entry; systems modeling for rapid containment and casualty mitigation; and disaster preparedness and critical infrastructure resilience. Highlights how risk analysis helps in the decision-making process for homeland security policy Presents specific examples that detail how various risk analysis methods provide decision support for homeland security policy makers and risk analysts Describes numerous case studies from academic, government, and industrial perspectives that apply risk analysis methods for addressing challenges within the U.S. Department of Homeland Security (DHS) Offers detailed information regarding each of the five DHS missions: prevent terrorism and enhance security; secure and manage our borders; enforce and administer our immigration laws; safeguard and secure cyberspace; and strengthen national preparedness and resilience Discusses the various approaches and challenges faced in homeland risk analysis and identifies improvements and methodological advances that influenced DHS to adopt an increasingly risk-informed basis for decision-making Written by top educators and professionals who clearly illustrate the link between risk science and homeland security policy making Applied Risk Analysis for Guiding Homeland Security Policy and Decisions is an excellent textbook and/or supplement for upper-undergraduate and graduate-level courses related to homeland security risk analysis. It will also be an extremely beneficial resource and reference for homeland security policy analysts, risk analysts, and policymakers from private and public sectors, as well as researchers, academics, and practitioners who utilize security risk analysis methods.

Big Data and Differential Privacy - Nii O. Attoh-Okine 2017-05-12

A comprehensive introduction to the theory and practice of contemporary data science analysis for railway track engineering Featuring a practical introduction to state-of-the-art data analysis for railway track engineering, Big Data and Differential Privacy: Analysis Strategies for Railway Track Engineering addresses common issues with the implementation of big data applications while exploring the limitations, advantages, and disadvantages of more conventional methods. In addition, the book provides a unifying approach to analyzing large volumes of data in railway track engineering using an array of proven methods and software technologies. Dr. Attoh-Okine considers some of today's most notable applications and implementations and highlights when a particular method or algorithm is most appropriate. Throughout, the book presents numerous real-world examples to illustrate the latest railway engineering big data applications of predictive analytics, such as the Union Pacific Railroad's use of big data to reduce train derailments, increase the velocity of shipments, and reduce emissions. In addition to providing an overview of the latest software tools used to analyze the large amount of data obtained by railways, Big Data and Differential Privacy: Analysis Strategies for Railway Track Engineering: • Features a unified framework for handling large volumes of data in railway track engineering using predictive analytics, machine learning, and data mining • Explores issues of big data and differential privacy and discusses the various advantages and disadvantages of more conventional data analysis techniques • Implements big data applications while addressing common issues in railway track maintenance • Explores the advantages and pitfalls of data analysis software such as R and Spark, as well as the Apache™ Hadoop® data collection database and its popular implementation MapReduce Big Data and Differential Privacy is a valuable resource for researchers and professionals in transportation science, railway track engineering, design engineering, operations research, and railway planning and management. The book is also appropriate for graduate courses on data analysis and data mining, transportation science, operations research, and infrastructure management. NII ATTOH-OKINE, PhD, PE is Professor in the Department of Civil and Environmental Engineering at the University of Delaware. The author of over 70 journal articles, his main areas of research include big data and data science; computational intelligence; graphical models and belief functions; civil infrastructure systems; image and signal processing; resilience engineering; and railway track analysis. Dr. Attoh-Okine has edited five books in the areas of computational intelligence, infrastructure systems and has served as an Associate Editor of various ASCE and IEEE journals.

Cost Estimating - Rodney D. Stewart 1991

This revision of the author's bestselling earlier work on cost estimating has been updated to provide currently applicable examples, data and techniques. Two new chapters have been added covering: computer tools and models for cost estimating, where to get these tools, and the features to look for; software cost estimating with special emphasis on the effect of CASE tools on software productivities and resulting software costs. A complete set of inflation tables is now included to permit conversion from any year dollars to any other year dollars from 1959 through 1997. Retains its comprehensive coverage of the elements needed to embark on a cost estimating task. Strengthened are the invaluable parts of the book which tell the estimator how to produce a competitive and credible cost estimate. Manufacturing standards for hardware and electronics are retained as are handy tables for determining the costs of engineering, design, documentation, drafting and testing.

Game Theory - E. N. Barron 2013-04-09

An exciting new edition of the popular introduction to game theory and its applications The thoroughly expanded Second Edition presents a unique, hands-on approach to game theory. While most books on the subject are too abstract or too basic for mathematicians, Game Theory: An Introduction, Second Edition offers a blend of theory and applications, allowing readers to use theory and software to create and analyze real-world decision-making models. With a rigorous, yet accessible, treatment of mathematics, the book focuses on results that can be used to determine optimal game strategies. Game Theory: An Introduction, Second Edition demonstrates how to use modern software, such as MapleTM, Mathematica®, and Gambit, to create, analyze, and implement effective decision-making models. Coverage includes the main aspects of game theory including the fundamentals of two-person zero-sum games, cooperative games, and population games as well as a large number of examples from various fields, such as economics, transportation, warfare, asset distribution, political science, and biology. The Second Edition features: • A new chapter on extensive games, which greatly expands the implementation of available models • New sections on correlated equilibria and exact formulas for three-player cooperative games • Many updated topics including threats in bargaining games and evolutionary stable strategies • Solutions and methods used to solve all odd-numbered problems • A companion website containing the related Maple and Mathematica data sets and code A trusted and proven guide for students of mathematics and economics, Game Theory: An Introduction, Second Edition is also an excellent resource for researchers and practitioners in economics, finance, engineering, operations research, statistics, and computer science.

Handbook of Scholarly Publications from the Air Force Institute of Technology (AFIT), Volume 1, 2000-2020 - Adedeji B. Badiru 2022-12-20

This handbook represents a collection of previously published technical journal articles of the highest caliber originating from the Air Force Institute of Technology (AFIT). The collection will help promote and affirm the leading-edge technical publications that have emanated from AFIT, for the first time presented as a cohesive collection. In its over 100 years of existence, AFIT has produced the best technical minds for national defense and has contributed to the advancement of science and technology through technology transfer throughout the nation. This handbook fills the need to share the outputs of AFIT that can guide further advancement of technical areas that include cutting-edge technologies such as blockchain, machine learning, additive manufacturing, 5G technology, navigational tools, advanced materials, energy efficiency, predictive maintenance, the internet of things, data analytics, systems of systems, modeling & simulation, aerospace product development, virtual reality, resource optimization, and operations management. There is a limitless vector to how AFIT's technical contributions can impact the society. Handbook of Scholarly Publications from the Air Force Institute of Technology (AFIT), Volume 1, 2000-2020, is a great reference for students, teachers, researchers, consultants, and practitioners in broad spheres of engineering, business, industry, academia, the military, and government.

Statistical Analysis of Cost-Effectiveness Data - Andrew R. Willan 2006-08-14

The statistical analysis of cost-effectiveness data is becoming increasingly important within health and medical research. Statistical Analysis of Cost-Effectiveness Data provides a practical book that synthesises the huge amount of research that has taken place in the area over the last two decades. Comprising an up-to-date overview of the statistical analysis of cost-effectiveness data, the book is supported by numerous worked examples from the author's own

experience. It has been written in a style suitable for medical statisticians and health care professionals alike. Key features include: an overview of statistical methods used in the analysis of cost-effectiveness data. coverage of Bayesian methodology. illustrated throughout by worked examples using real data. suitability for health care professionals with limited statistical knowledge. discussion of software used for data analysis. An essential reference for biostatisticians and health economists engaged in cost-effectiveness analysis of health-care interventions, both in academia and industry. Also of interest to graduate students of biostatistics, public health and economics.

Green Building - RSMeans 2010-11-11

A unique cost reference, updated and expanded, for architects, engineers, contractors, building owners, and managers Green building is no longer a trend. Since the publication of the widely read first edition of this book, green building has become a major advancement in design and construction. Building codes and standards have adopted much stricter energy efficiencies. Businesses, institutions, and communities have discovered huge savings, along with health and marketing advantages, in sustainable building. Private facilities, as well as public buildings for Federal, state, and local governments are increasingly required to design and build sustainably in both new construction and renovation. This Third Edition has been updated with the latest in green building tech-nologies, design concepts, standards, and costs. The chapters, case studies, and resources give you practical guidance on green building, including the latest on: Green building approaches, materials, rating systems, standards, and guidelines Energy efficiencies, implementing energy modeling tools Designing and specifying, as well as commissioning, green building projects Often-specified products and materials, as well as a sample spec Goals and techniques for health, comfort, and productivity Evaluating the cost versus value of green products over their life cycle Low-cost green strategies, and special economic incentives and funding Building deconstruction and cost considerations With a new chapter on greening of commercial real estate, this reference is a one-stop resource for the latest in green building approaches and implementation. The contributors, all prominent leaders in green building, include: Mark Kalin, FAIA, FCSI, author of the original GreenSpec Andy Walker, Ph.D., PE, senior engineer with NREL Joseph Macaluso, AACE, certified cost consultant

Computational Science and Its Applications – ICCSA 2017 - Osvaldo Gervasi 2017-07-13

The six-volume set LNCS 10404-10409 constitutes the refereed proceedings of the 17th International Conference on Computational Science and Its Applications, ICCSA 2017, held in Trieste, Italy, in July 2017. The 313 full papers and 12 short papers included in the 6-volume proceedings set were carefully reviewed and selected from 1052 submissions. Apart from the general tracks, ICCSA 2017 included 43 international workshops in various areas of computational sciences, ranging from computational science technologies to specific areas of computational sciences, such as computer graphics and virtual reality. Furthermore, this year ICCSA 2017 hosted the XIV International Workshop On Quantum Reactive Scattering. The program also featured 3 keynote speeches and 4 tutorials.

Sustainable Operations and Supply Chain Management - Valeria Belvedere 2016-12-28

Sustainable Operations and Supply Chain Management addresses the most relevant topics of operations and supply chain management from the perspective of sustainability. The main focus is to provide a step by step guide for managerial decisions made along the product life-cycle, following a path made up of the following steps: product design, sourcing, manufacturing, packaging and physical distribution, reverses logistics and recovery.

New Code of Estimating Practice - The Chartered Institute of Building 2018-05-29

The essential, authoritative guide to providing accurate, systematic, and reliable estimating for construction projects—newly revised Pricing and bidding for construction work is at the heart of every construction business, and in the minds of construction consultants' poor bids lead to poor performance and nobody wins. New Code of Estimating Practice examines the processes of estimating and pricing, providing best practice guidelines for those involved in procuring and pricing construction works, both in the public and private sectors. It embodies principles that are applicable to any project regardless of size or complexity. This authoritative guide has been completely rewritten to include much more contextual and educational material as well as the code of practice. It covers changes in estimating practice; the bidding process; the fundamentals in formulating a bid; the pre-qualification process; procurement options; contractual arrangements and legal issues; preliminaries; temporary works; cost estimating techniques; risk management; logistics; resource and production planning; computer-aided estimating; information and time planning; resource planning and pricing; preparation of an estimator's report; bid assembly and adjudication; pre-production planning and processes; and site production. Established standard for the construction industry, providing the only code of practice on construction estimating Prepared under the auspices of the Chartered Institute of Building and endorsed by a range of other professional bodies Completely rewritten since the 7th edition, to include much more contextual and educational material, as well as the core code of practice New Code of Estimating Practice is an important book for construction contractors, specialist contractors, quantity surveyors/cost consultants, and for students of construction and quantity surveying.

Cost Estimation - Gregory K. Mislick 2015-04-27

Presents an accessible approach to the cost estimation tools, concepts, and techniques needed to support analytical and cost decisions Written with an easy-to-understand approach, Cost Estimation: Methods and Tools provides comprehensive coverage of the quantitative techniques needed by professional cost estimators and for those wanting to learn about this vibrant career field. Featuring the underlying mathematical and analytical principles of cost estimation, the book focuses on the tools and methods used to predict the research and development, production, and operating and support costs for successful cost estimation in industrial, business, and manufacturing processes. The book begins with a detailed historical perspective and key terms of the cost estimating field in order to develop the necessary background prior to implementing the presented quantitative methods. The book proceeds to fundamental cost estimation methods utilized in the field of cost estimation, including working with inflation indices, regression analysis, learning curves, analogies, cost factors, and wrap rates. With a step-by-step introduction to the practicality of cost estimation and the available resources for obtaining relevant data, Cost Estimation: Methods and Tools also features: Various cost estimating tools, concepts, and techniques needed to support business decisions Multiple questions at the end of each chapter to help readers obtain a deeper understanding of the discussed methods and techniques An overview of the software used in cost estimation, as well as an introduction to the application of risk and uncertainty analysis A Foreword from Dr. Douglas A. Brook, a professor in the Graduate School of Business and Public Policy at the Naval Postgraduate School, who spent many years working in the

Department of Defense acquisition environment Cost Estimation: Methods and Tools is an excellent reference for academics and practitioners in decision science, operations research, operations management, business, and systems and industrial engineering, as well as a useful guide in support of professional cost estimation training and certification courses for practitioners. The book is also appropriate for graduate-level courses in operations research, operations management, engineering economics, and manufacturing and/or production processes.

Encyclopedia of Software Engineering Three-Volume Set (Print) - Phillip A. Laplante 2010-11-22

Software engineering requires specialized knowledge of a broad spectrum of topics, including the construction of software and the platforms, applications, and environments in which the software operates as well as an understanding of the people who build and use the software. Offering an authoritative perspective, the two volumes of the Encyclopedia of Software Engineering cover the entire multidisciplinary scope of this important field. More than 200 expert contributors and reviewers from industry and academia across 21 countries provide easy-to-read entries that cover software requirements, design, construction, testing, maintenance, configuration management, quality control, and software engineering management tools and methods. Editor Phillip A. Laplante uses the most universally recognized definition of the areas of relevance to software engineering, the Software Engineering Body of Knowledge (SWEBOK®), as a template for organizing the material. Also available in an electronic format, this encyclopedia supplies software engineering students, IT professionals, researchers, managers, and scholars with unrivaled coverage of the topics that encompass this ever-changing field. Also Available Online This Taylor & Francis encyclopedia is also available through online subscription, offering a variety of extra benefits for researchers, students, and librarians, including: Citation tracking and alerts Active reference linking Saved searches and marked lists HTML and PDF format options Contact Taylor and Francis for more information or to inquire about subscription options and print/online combination packages. US: (Tel) 1.888.318.2367; (E-mail) e-reference@taylorandfrancis.com International: (Tel) +44 (0) 20 7017 6062; (E-mail) online.sales@tandf.co.uk

Cost Estimating Manual for Water Treatment Facilities - Susumu Kawamura 2008-09-16

NOTE TO THE READER: All forms and material that were previously on a CD-ROM that accompanied this book have been moved to the following web site: http://booksupport.wiley.com Tested-and-proven techniques for quick, accurate estimates Here is the first manual that guides engineers, planners, and contractors through the process of estimating the cost of building water treatment facilities. Based on more than eighty years of the two authors' collective experience, the Cost Estimating Manual for Water Treatment Facilities not only enables you to arrive at a dependable estimate, it shows you how to do it quickly with a minimum of information and supporting data. In order to ensure reliability, the authors have compiled and analyzed the results from their own construction cost estimates for more than 500 projects as well as the results from many other engineers and contractors. The manual identifies forty-three treatment processes, nine types of water treatment plants, plus five additional types of advanced water treatment plants. The authors then demonstrate how to calculate costs for each element, accounting for needed mark-ups and allowances in order to arrive at the total plant construction cost. To help you make your own estimates, the manual provides: Examples of cost estimates for different water treatment processes Historical data from several public agencies Sample tables for 10 mgd and 100 mgd product water flow rates for each type of treatment plant Website access with Excel spreadsheets that enable you to perform estimates using your own data Now that the Cost Estimating Manual for Water Treatment Facilities is available, you no longer have to rely on hunches and anecdotal information; you have a proven, scientific method that leads to reliable estimates.