

7 Principles Of Engineering Economics

Fundamentals of Engineering Economic Analysis offers a powerful, visually-rich approach to the subject—delivering streamlined yet rigorous coverage of the use of economic analysis techniques in engineering design. This award-winning textbook provides an impressive array of pedagogical tools to maximize student engagement and comprehension, including learning objectives, key term definitions, comprehensive case studies, classroom discussion questions, and challenging practice problems. Clear, topically—organized chapters guide students from fundamental concepts of borrowing, lending, investing, and time value of money, to more complex topics such as capitalized and future worth, external rate of return, depreciation, and after-tax economic analysis. This fully-updated second edition features substantial new and revised content that has been thoroughly re-designed to support different learning and teaching styles. Numerous real-world vignettes demonstrate how students will use economics as practicing engineers, while plentiful illustrations, such as cash flow diagrams, reinforce student understanding of underlying concepts. Extensive digital resources now provide an immersive interactive learning environment, enabling students to use integrated tools such as Excel. The addition of

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the WileyPLUS platform provides tutorials, videos, animations, a complete library of Excel video lessons, and much more.

With interest in topics such as climate change, energy security, and alternative energy sources being at an all-time high, the effects of today's decisions now rest on the shoulders of future generations. There are no easy answers to our energy issues, so costs and benefits must be considered when evaluating all energy alternatives; alongside that, prices must be right and need to reflect the full social costs to society of a given source of energy. Energy Economics outlines the fundamental issues and possible solutions to the challenges of energy production and use, and presents a framework for energy decisions based upon sound economic analysis. It considers market forces and policy goals, including economic prosperity, environmental protection, and other considerations that affect societal well-being. This book focuses on both energy choices and the impact of these choices on market performance, environmental conditions, and sustainability. The initial section covers the fundamental economic concepts for analyzing energy markets. Following this, a detailed analysis of established energy sources, specifically fossil fuels and nuclear energy, leads into consideration of energy alternatives such as renewable energy and next-generation

alternatives. Electricity production and regulatory trends are covered in depth. The final section considers policy: environmental considerations, sustainability, and energy security. The concluding chapter is a comprehensive vision for our energy future. Drawing on current energy headlines, perspectives familiar from the popular press, and views outside economics, this text sharpens students' ability to understand, evaluate, and critique policy using appropriate economic analysis. The text builds a foundation that culminates in a view of a comprehensive energy policy that improves upon the vacillations of past decades.

An easy-to-follow contemporary engineering economics text that helps making sound economic decisions without advanced mathematics. This one-semester introduction to the fundamentals of engineering economics provides an overview of the basic theory and mathematics underlying operational business decisions that engineering technology, engineering, and industrial technology students will face in the workplace. A basic knowledge of economics empowers a manager to balance costs with production. This new edition of *Fundamentals of Economics for Engineering Technologists and Engineers* is written in plain language. Concepts have been simplified and kept straightforward with an emphasis on "how to apply" economic principles. Practical examples as a tool for managing business

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data and giving detailed analysis of business operations. throughout the text make good use of Microsoft Excel templates, provided on the book's companion website, for students. Chapter-end exercises provide discussion and multiple-choice questions along with numerical problems, and a solutions manual and instructor resources is given for adopting instructors.

This best-selling book provides a sound understanding of the principles, basic concepts, and methodology of engineering economy. This user-friendly book is extensively revised and updated to reflect current trends and issues, with an emphasis on the economics of engineering design throughout. A useful reference for engineers interested in reviewing the basic principles of engineering economy.

In today's hyper-competitive, global marketplace, a manufacturing company needs a competitive edge if it is to survive and grow. That edge could be anything from superior manufacturing technology to innovative product design; from patent protection to solid, well-established customer relationships. One competitive edge available to all manufacturers, but realized by only a few, is the ability to accurately measure, control, and optimize costs throughout a product's entire life cycle. The lack of a methodology to engineer cost optimization into every product makes attaining and maintaining profitability

all that the more difficult. Cost Engineering provides a means for a manufacturer to achieve and sustain profitability by designing and manufacturing products to specific cost requirements. It incorporates a variety of proven methodologies including cost estimating, cost control, and cost optimization.

Features: ? Describes the components and organization of an effective cost optimization process
? Provides detailed explanations of cost estimating techniques for many of the most common manufacturing processes
? Explains the selection and use of appropriate cost allocation methods
? Presents the fundamentals of cost-based negotiation
? Includes both proper and improper executions of cost engineering principles

The details presented in this book are important to design engineers, manufacturing engineers, buyers, accountants, cost estimators, cost optimization specialists, and their managers and provides CEOs, COOs, general managers, product line managers, and plant managers with guidance on improving and sustaining profitability. .

Engineering Economy, 7th edition, presents a crisp, bold new design using color, highlighting and icons to focus on important concepts, terms, equations and decision guidelines. There are new features, new topics (such as ethics and staged decision making), and new online tools; yet no compromise on coverage, examples, or the well-accepted writing

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style of this popular text. The preface provides an overview of What's New and graphically depicts resources for Instructors and Students. Solved examples, problems and case studies target many of the current engineering challenges in areas such as energy, ethics, the environment, and the world's changing economics. Approximately eighty percent of the end-of-chapter problems are revised or new for this edition. Some of the outstanding pedagogical characteristics of this new edition include its easy-to-read writing style, learning outcomes for each section, progressive examples used throughout a chapter, solved examples using manual and integrated spreadsheet solutions, updated case studies, Fundamentals of Engineering (FE) exam questions for each chapter, and numerous new end-of-chapter exercises. A significant new feature is the availability of brief, downloadable online presentations (podcasts) that incorporate voice-over, animated Power Point slides. These are available on the text's website for students and instructors to utilize as support tools in or outside the classroom. Each module includes descriptive material and worked examples that supplement course material. Principles of Economics and Management for Manufacturing Engineering combines key engineering economics principles and applications in one easy to use reference. Engineers, including design, mechanical, and manufacturing engineers

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are frequently involved in economics-related decisions, whether directly when selecting materials or indirectly when managers make order quantity decisions based on their work. Having a knowledge of the management and economic activities that touch on engineering work is a core part of most foundational engineering qualifications and becomes even more important in industry. Covering a wide range of management and economic topics from the point-of-view of an engineer in industry, this reference provides everything needed to understand the commercial context of engineering work. Covers the full range of basic economic concepts as well as engineering economics topics Includes end of chapter questions and chapter summaries that make this an ideal self-study resource Provides step-by-step instructions for cost accounting for engineers This book addresses Integrated Design Engineering (IDE), which represents a further development of Integrated Product Development (IPD) into an interdisciplinary model for both a human-centred and holistic product development. The book covers the systematic use of integrated, interdisciplinary, holistic and computer-aided strategies, methods and tools for the development of products and services, taking into account the entire product lifecycle. Being applicable to various kinds of products (manufactured, software, services, etc.), it helps readers to approach product development in a

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synthesised and integrated way. The book explains the basic principles of IDE and its practical application. IDEs usefulness has been demonstrated in case studies on actual industrial projects carried out by all book authors. A neutral methodology is supplied that allows the reader to choose the appropriate working practices and performance assessment techniques to develop their product quickly and efficiently. Given its manifold topics, the book offers a valuable reference guide for students in engineering, industrial design, economics and computer science, product developers and managers in industry, as well as industrial engineers and technicians.

This textbook provides a fundamental overview of the application of engineering economic principles to transportation infrastructure investments. Basic theory is presented and illustrated with examples specific to the transportation field. It also reviews the history of transportation finance, as well as current methods for funding transportation investments in the U.S. Future problems and potential solutions are also discussed and illustrated.

For introductory engineering economics courses. Relate engineering economics to students' everyday lives for theoretical and conceptual understanding Chan Park, author of the best-selling Contemporary Engineering Economics, tells the story of engineering economy with the more concise

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Fundamentals of Engineering Economics by relating concepts from class to students' everyday lives. This book provides sound and comprehensive coverage of course concepts while addressing both the theoretical and the practical concerns of engineering economics. Written to appeal to a wide range of engineering disciplines, the text helps students build skills in making informed financial decisions and incorporates all critical decision-making tools, including the most contemporary, computer-oriented ones. MyLab(tm) Engineering is not included.

Students, if MyLab Engineering is a recommended/mandatory component of the course, please ask your instructor for the correct ISBN. MyLab Engineering should only be purchased when required by an instructor. Instructors, contact your Pearson representative for more information. Reach every student by pairing this text with MyLab Engineering MyLab(tm) is the teaching and learning platform that empowers you to reach every student. By combining trusted author content with digital tools and a flexible platform, MyLab personalizes the learning experience and improves results for each student.

This title offers an overview of the fundamentals and practice applications of probability and statistics, microeconomics, engineering economics, hard and soft systems analysis, and sustainable development and sustainability applications in engineering

planning.

Covering detailed discussion of fundamental concepts of economics, the textbook commences with comprehensive explanation of theory of consumer behavior, utility maximization and optimal choice, profit function, cost minimization and cost function. The textbook covers methods including present worth method, future worth method, annual worth method, internal rate of return method, explicit re-investment rate of return method and payout method useful for studying economic studies. A chapter on value engineering discusses important topics such as function analysis systems techniques, the value index, value measurement techniques, innovative phase and constraints analysis in depth. It facilitates the understanding of the concepts through illustrations and solved problems. This text is the ideal resource for Indian undergraduate engineering students in the fields of mechanical engineering, computer science and engineering and electronics engineering for a course on engineering economics/engineering economy.

This text covers the basic techniques and applications of engineering economy for all disciplines in the engineering profession. The writing style emphasizes brief, crisp coverage of the principle or technique discussed in order to reduce the time taken to present and grasp the essentials. The objective of the text is to explain and

demonstrate the principles and techniques of engineering economic analysis as applied in different fields of engineering. This brief text includes coverage of multiple attribute evaluation for instructors who want to include non-economic dimensions in alternative evaluation and the discussion of risk considerations in the appendix, compared to Blank's comprehensive text, where these topics are discussed in two unique chapters. RISA-3D (Rapid Interactive Structural Analysis) is used for structural analysis and design. The tools in RISA-3D are primarily used in structural engineering and they help users to design structural models using both parametric 3D modeling and 2D drafting elements. The RISA-3D model comprise of a physical representation of a structure. The structural modeling in RISA-3D can be used for structural designing and analysis application. The Exploring RISA-3D 14.0 book explains the concepts and principles of RISA-3D through practical examples, tutorials, and exercises. This enables the users to harness the power of structural designing with RISA-3D for their specific use. In this book, the author emphasizes on physical modeling, structural desining, creating load cases, specifying boundary conditions, preparation of project report. This book covers the various stages involved in analyzing. This book is specially meant for professionals and students in structural engineering, civil engineering,

and allied fields in the building industry. Salient Features Detailed explanation of RISA-3D Real-world projects given as tutorials Tips and Notes throughout the textbook 200 pages of heavily illustrated text Self-Evaluation Tests, Review Questions, and Exercises at the end of the chapters Table of Contents Chapter 1: Introduction to RISA-3D Chapter 2: Getting Start with RISA-3D Chapter 3: Modeling Chapter 4: Loads Chapter 5: Boundary Conditions Chapter 6: Performing Analysis and Specifying Design Parameters Chapter 7: Viewing Results and Preparing Report Index

In today's rapidly changing global economy, business managers must have the tools and know-how to quickly evaluate the economic viability of potential solutions to engineering problems. An entire field of study has evolved to meet this need, yet there are few straightforward texts that outline the basics of engineering economics. "Fundamentals of Engineering Economics" is an accessible, comprehensive guide to the fundamental principles, concepts, and methods of engineering economics. Utilizing detailed case studies and exercises reflecting current trends and issues in economics, this book introduces students to a variety of key concepts, including estimation of the time value of money, evaluation of a single project, decision analysis, depreciation and taxes. This is an ideal textbook for Economic Analysis and Technical

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Applications students, or anyone seeking to gain an understanding of the core concepts of engineering economics. "Fundamentals of Engineering Economics" is organized into the following topical chapters: - Overview of Engineering Economy - Fixed and Variable Costs - Time Worth of Money - Five Methods for Evaluation of Capital Project - Comparison of Alternates and Decision Analysis - Depreciation and Replacement Analysis - Taxes, Tariffs, and Duties - Public Sector Initiatives and Benefit-to-Cost Ratio - Break-Even Analysis and Spider Plots

Kal Renganathan Sharma serves as Adjunct Professor of Chemical Engineering at the Roy G. Perry College of Engineering at Prairie View A&M University. He received his B.Tech. from the Indian Institute of Technology (1985, Chennai, India) and his MS and Ph.D degrees from West Virginia University (1987, 1990, Morgantown, WV). All three degrees are in chemical engineering. Dr. Sharma is the author of 10 books, 4 book chapters, 21 journal articles, 528 conference papers and 108 other presentations. He is the recipient of several prestigious honors and awards, including the Outstanding Student of the Penultimate Year from the Rev. Brothers of St. Gabriel at RSK Higher Secondary School (Trichy, India) and an Honorary Fellowship from the Australian Institute of High Energetic Materials (Melbourne, Australia).

This ISR business & management survey provides a

concise comprehensive account of business-economic & other factors affecting the growth & performance of engineering firms. It covers a wide range of companies & firm types - in all the main engineering sectors - in Britain, the United States, Continental Europe, & Japan. It also combines the findings of original field research with an extensive review of the key business managerial & economic literature on the subject. The study is intended for senior managers in engineering firms, production management consultants, business school academics, & investment analysts & others with an interest in production engineering/manufacturing. For all engineers and practitioners, it is essential to have a fundamental understanding of cost structure, estimating cash flows, and evaluating alternative projects and designs on an economic basis. Engineering Economics for Aviation and Aerospace provides the tools and techniques necessary for engineers to economically evaluate their projects and choices. The focus of this book is on a comprehensive understanding of the theory and practical applications of engineering economics. It explains and demonstrates the principles and techniques of engineering economics and financial analysis as applied to the aviation and aerospace industries. Time value of money, interest factors, and spreadsheet functions are used to evaluate the cash flows associated with a single project or multiple

projects. The alternative engineering economics tools and techniques are utilized in separate chapters to evaluate the attractiveness of a single project or to select the best of multiple alternatives. Most of the engineering economics and financial mathematics books available in the market take either a pure theoretical approach or offer limited applications. This book incorporates both approaches, providing students of aviation and industrial economics, as well as practitioners, with the necessary mathematical knowledge to evaluate alternatives on an economic basis.

For courses in engineering and economics
Comprehensively blends engineering concepts with economic theory
Contemporary Engineering Economics teaches engineers how to make smart financial decisions in an effort to create economical products. As design and manufacturing become an integral part of engineers' work, they are required to make more and more decisions regarding money. The Sixth Edition helps students think like the 21st century engineer who is able to incorporate elements of science, engineering, design, and economics into his or her products. This text comprehensively integrates economic theory with principles of engineering, helping students build sound skills in financial project analysis. MyEngineeringLab™ not included. Students, if MyEngineeringLab is a recommended/mandatory component of the course,

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please ask your instructor for the correct ISBN and course ID. MyEngineeringLab should only be purchased when required by an instructor.

Instructors, contact your Pearson representative for more information. MyEngineeringLab is an online homework, tutorial, and assessment program designed to work with this text to engage students and improve results. Within its structured environment, students practice what they learn, test their understanding, and pursue a personalized study plan that helps them better absorb course material and understand difficult concepts.

Instructors can choose from a wide range of assignment options, including time limits, proctoring, and maximum number of attempts allowed. The bottom line: MyEngineeringLab means less time grading and more time teaching.

This student-friendly text on the current economic issues particular to engineering covers the topics needed to analyze engineering alternatives.

Students use both hand-worked and spreadsheet solutions of examples, problems and case studies. In this edition the options have been increased with an expanded spreadsheet analysis component, twice the number of case studies, and virtually all new end-of-chapter problems. The chapters on factor derivation and usage, cost estimation, replacement studies, and after-tax evaluation have been heavily revised. New material is included on public sector

projects and cost estimation. A reordering of chapters puts the fundamental topics up front in the text. Many chapters include a special set of problems that prepare the students for the Fundamentals of Engineering (FE) exam. This text provides students and practicing professionals with a solid preparation in the financial understanding of engineering problems and projects, as well as the techniques needed for evaluating and making sound economic decisions. Distinguishing characteristics include learning objectives for each chapter, an easy-to-read writing style, many solved examples, integrated spreadsheets, and case studies throughout the text. Graphical cross-referencing between topics and quick-solve spreadsheet solutions are indicated in the margin throughout the text. While the chapters are progressive, over three-quarters can stand alone, allowing instructors flexibility for meeting course needs. A complete online learning center (OLC) offers supplemental practice problems, spreadsheet exercises, and review questions for the the Fundamentals of Engineering (FE) exam.

Designed as a textbook for undergraduate students in various engineering disciplines—Mechanical, Civil, Industrial Engineering, Electronics Engineer-ing and Computer Science—and for postgraduate students in Industrial Engineering and Water Resource Management, this comprehensive and well-

organized book, now in its Second Edition, shows how complex economic decisions can be made from a number of given alternatives. It provides the managers not only a sound basis but also a clear-cut approach to making decisions. These decisions will ultimately result in minimizing costs and/or maximizing benefits. What is more, the book adequately illustrates the concepts with numerical problems and Indian cases. While retaining all the chapters of the previous edition, the book adds a number of topics to make it more comprehensive and more student friendly. What's New to This Edition

- Discusses different types of costs such as average cost, recurring cost, and life cycle cost.
- Deals with different types of cost estimating models, index numbers and capital allowance.
- Covers the basics of nondeterministic decision making.
- Describes the meaning of cash flows with probability distributions and decision making, and selection of alternatives using simulation.
- Discusses the basic concepts of Accounting.

This book, which is profusely illustrated with worked-out examples and a number of diagrams and tables, should prove extremely useful not only as a text but also as a reference for those offering courses in such areas as Project Management, Production Management, and Financial Management.

For Engineering Economics courses, found in departments of Industrial, Civil, Mechanical, and

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Electrical Engineering. This text is also useful for any individual interested in the field of Industrial, Civil, Mechanical and Electrical Engineering. From the author of the best-selling Contemporary Engineering Economics text, Fundamentals of Engineering Economics offers a concise, but in-depth coverage of all fundamental topics of Engineering Economics. "All of the basic principles, techniques, and tools of undergraduate engineering economics are covered in this second edition. The textual material, examples, and problems are designed to meet the needs of a two- or three-semester/ quarter credit hour service course for all disciplines of engineering, engineering technology, and engineering management. The printed and electronic versions are suitable for different course formats. Especially helpful are the website-based podcasts, which incorporate voice-over animated and annotated PPT slides. These podcasts serve as supplemental and support materials for students in any course format--resident, online, or distance education"--

Delivers a comprehensive textbook for a single-semester course in engineering economics/engineering economy for undergraduate engineering students.

For undergraduate, introductory courses in Engineering Economics. Used by engineering students worldwide, this best-selling text provides a sound understanding of the principles, basic

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concepts, and methodology of engineering economy. Built upon the rich and time-tested teaching materials of earlier editions, it is extensively revised and updated to reflect current trends and issues, with an emphasis on the economics of engineering design throughout. It provides one of the most complete and up-to-date studies of this vitally important field.

Engineers need to "sell" engineering projects and products to managers, executives, and customers economically as well as technologically, environmentally, aesthetically, and so on. Principles of Engineering Economic Analysis, 6e teaches engineers to properly and methodically evaluate their work on an economic basis, and to convey it effectively to those who have the power to say "yea" or "nay." The 6th edition is updated and expanded to be comprehensive and flexible - it includes all standard topics plus stronger coverage of more advanced analysis techniques than other books (e.g., risk analysis, sensitivity analysis, cost estimating, public sector economics, capital budgeting, etc.), with the most thorough integration and guidance for spreadsheet use. The text provides a unified treatment of economic analysis principles and techniques from a cash flow perspective, a proven classroom approach that is very successful in practice. Chapter-opening stories about well-known companies, engineering and personal finance

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examples throughout the text, and external web resources help motivate students. FE-Like problems at the end of each chapter give students practice with the kinds of problems they'll encounter on the FE exam. The 6th edition provides students and instructors the latest tax information, and up-to-date company and industry information in the chapter opening stories, reflecting changes resulting from the recent tumult in the economy, so that students can work with the most current and relevant information. TRB's National Cooperative Highway Research Program (NCHRP) Synthesis 424: Engineering Economic Analysis Practices for Highway Investment explores how U.S. transportation agencies have applied engineering economics--benefit--cost analyses and similar procedures--to decisions on highway investments. "For courses in engineering and economics" Comprehensively blends engineering concepts with economic theory " Contemporary Engineering Economics " teaches engineers how to make smart financial decisions in an effort to create economical products. As design and manufacturing become an integral part of engineers work, they are required to make more and more decisions regarding money. The Sixth Edition helps students think like the 21st century engineer who is able to incorporate elements of science, engineering, design, and economics into his or her products. This text comprehensively

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integrates economic theory with principles of engineering, helping students build sound skills in financial project analysis. Also Available with MyEngineeringLab This title is also available with MyEngineeringLab an online homework, tutorial, and assessment program designed to work with this text to engage students and improve results. Within its structured environment, students practice what they learn, test their understanding, and pursue a personalized study plan that helps them better absorb course material and understand difficult concepts. Students interested in purchasing this title with MyEngineeringLab should ask their instructor for the correct package ISBN and Course ID. Instructors, contact your Pearson representative for more information. "

Purposeful Engineering Economics stands as a unique and highly original complement to the traditional engineering economics curriculum. This primarily narrative text conveys the essence of an "Austrian" economic perspective on cash flow analysis and decision making in engineering without extensive tables and graphs and requires very little mathematics. The book's objective is to add a new perspective to the usual study of cash flow analysis and solely econometric engineering decision making. The author draws on the methodology of the Austrian Economists—a school of economic thought that bases its study of economic phenomena on the

interpretation and analysis of the purposeful actions of individuals. The book includes an array of illustrative case studies examined in detail by the author and emphasizes the importance of market processes and price signals to coordinate engineering plans.

This unified examination of economic analysis principles from a cash flow viewpoint, provides a systematic, 7-step approach for performing a comparison of investment alternatives. It offers comprehensive coverage of cost concepts, inflation, ACRS and modern methods of depreciation, income taxes, economic analysis. It features more current economy examples, a new chapter on reality issues, and new material on non-manufacturing examples.

Praise for *How Learning Works* "How Learning Works is the perfect title for this excellent book.

Drawing upon new research in psychology, education, and cognitive science, the authors have demystified a complex topic into clear explanations of seven powerful learning principles. Full of great ideas and practical suggestions, all based on solid research evidence, this book is essential reading for instructors at all levels who wish to improve their students' learning." —Barbara Gross Davis, assistant vice chancellor for educational development, University of California, Berkeley, and author, *Tools for Teaching* "This book is a must-read for every instructor, new or experienced. Although I have been

teaching for almost thirty years, as I read this book I found myself resonating with many of its ideas, and I discovered new ways of thinking about teaching."

—Eugenia T. Paulus, professor of chemistry, North Hennepin Community College, and 2008 U.S.

Community Colleges Professor of the Year from The Carnegie Foundation for the Advancement of Teaching and the Council for Advancement and Support of Education "Thank you Carnegie Mellon for making accessible what has previously been inaccessible to those of us who are not learning scientists. Your focus on the essence of learning combined with concrete examples of the daily challenges of teaching and clear tactical strategies for faculty to consider is a welcome work. I will recommend this book to all my colleagues."

—Catherine M. Casserly, senior partner, The Carnegie Foundation for the Advancement of Teaching "As you read about each of the seven basic learning principles in this book, you will find advice that is grounded in learning theory, based on research evidence, relevant to college teaching, and easy to understand. The authors have extensive knowledge and experience in applying the science of learning to college teaching, and they graciously share it with you in this organized and readable book." —From the Foreword by Richard E. Mayer, professor of psychology, University of California, Santa Barbara; coauthor, *e-Learning* and the

Science of Instruction; and author, Multimedia Learning

The authors cover two general topics: basic engineering economics and risk analysis in this text. Within the topic of engineering economics are discussions on the time value of money and interest relationships. These interest relationships are used to define certain project criteria that are used by engineers and project managers to select the best economic choice among several alternatives. Projects examined will include both income- and service-producing investments. The effects of escalation, inflation, and taxes on the economic analysis of alternatives are discussed. Risk analysis incorporates the concepts of probability and statistics in the evaluation of alternatives. This allows management to determine the probability of success or failure of the project. Two types of sensitivity analyses are presented. The first is referred to as the range approach while the second uses probabilistic concepts to determine a measure of the risk involved. The authors have designed the text to assist individuals to prepare to successfully complete the economics portions of the Fundamentals of Engineering Exam. Table of Contents: Introduction / Interest and the Time Value of Money / Project Evaluation Methods / Service Producing Investments / Income Producing Investments / Determination of Project Cash Flow / Financial Leverage / Basic

Statistics and Probability / Sensitivity Analysis

This work offers a concise, but in-depth coverage of all fundamental topics of engineering economics.

Part I: Process design -- Introduction to design -- Process flowsheet development -- Utilities and energy efficient design -- Process simulation -- Instrumentation and process control -- Materials of construction -- Capital cost estimating -- Estimating revenues and production costs -- Economic evaluation of projects -- Safety and loss prevention -- General site considerations -- Optimization in design -- Part II: Plant design -- Equipment selection, specification and design -- Design of pressure vessels -- Design of reactors and mixers -- Separation of fluids -- Separation columns (distillation, absorption and extraction) -- Specification and design of solids-handling equipment -- Heat transfer equipment -- Transport and storage of fluids.

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