Chemical Engineering Economics

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 econom ics/engineering economy. Upper-level undergraduate text

for process design courses in chemical engineering. Introduces students to the technology & terminology they will encounter in industrial practice. Presents short-cut techniques for specifying equipment or isolating important elements of a design

project. Emphasizes project definition, flow sheet development & equipment specification. Covers the economics of process design. End-of-chapter exercises guide students through step-by-step solutions of design problems.

Includes four case studies from past AICHE competitions. Get Cutting-Edge Coverage of All Chemical Engineering Topics—from Fundamentals to the Latest Computer Applications First published in 1934, Perry's Chemical Engineers'

Handbook has equipped generations of engineers and chemists with an expert source of chemical engineering information and data. Now updated to reflect the latest technology and processes of the new millennium, the

Eighth Edition of this classic guide provides unsurpassed coverage of every aspect of chemical engineering-from fundamental principles to chemical processes and equipment to new computer applications. Filled with over 700

detailed illustrations, the Eighth Edition of Perry's Chemcial Engineering Handbook features: Comprehensive tables and charts for unit conversion A greatly expanded section on physical and chemical data New to this edition: the latest advances

in distillation, liquid-liquid extraction, reactor modeling, biological processes, biochemical and membrane separation processes, and chemical plant safety practices with accident case histories Inside This Updated Chemical

Engineering Guide - Conversion Factors and Mathematical Symbols • Physical and Chemical Data • Mathematics • Thermodynamics • Heat and Mass Transfer • Fluid and Particle Dynamics Reaction Kinetics • Process Control • Process Economics • Transport and

Storage of Fluids • Heat Transfer Equipment • Psychrometry, Evaporative Cooling, and Solids Drying • Distillation • Gas Absorption and Gas-Liquid System Design • Liquid-Liquid Extraction Operations and Equipment •

Adsorption and Ion Exchange • Gas-Solid Operations and Equipment • Liquid-Solid Operations and Equipment • Solid-Solid Operations and Equipment • Size Reduction and Size Enlargement • Handling of Bulk Solids and Packaging of Solids

and Liquids • Alternative Separation Processes • And Many Other Topics! "Covers global and domestic competition, marketing strategies, operating expenses, and environmental and safety regulations for chemical

professionals at all levels. Contains up-to-date mergers and acquisitions of chemical companies."

This book, an introduction to a very dynamic subject of Chemical Project Economics, is aimed at students of Chemical Engineering and

practicing engineers. It would also be useful to management students for a better appreciation the economics of chemical p

A Practical Guide Engineering Economics for the 21st Century Design, Integration and Sustainability

Analysis Chemical Engineering Process Design and Economics Chemical Engineering Economics ... Third edition Process Economics Chemical Engineering Economics ... Second edition

Chemical Engineering Economics. 2. Ed

Chemical Process Engineering presents a systematic approach to solving design problems by listing the needed equations, calculating degrees-of-freedom, developing calculation procedures to generate

process specifications- mostly pressures, temperatures, compositions, and flow rates- and sizing equipment. This illustrative reference/text tabulates numerous easy-to-follow calculation procedures as well as the relationships

needed for sizing commonly used equipment.

This illustrative reference presents a systematic approach to solving design problems by listing the needed equations, calculating degrees-of-freedom, developing calculation procedures to generate

process specifications, and sizing equipment. Containing over thirty detailed examples of calculation procedures, the book tabulates numerous easy-to-follow calculation procedures as well as the relationships needed for sizing commonly used

equipment. "Chemical Process Engineering" emphasizes the evaluation and selection of equipment by considering its mechanical design and encouraging the selection of standard-size equipment offered by manufacturers to lower costs.

This new edition contains chapters on process synthesis, computer-aided design and design of chemical reactors. The economic analysis has been updated. Numerous real examples include computer or hand solutions, with an increased emphasis on

computer use in design, economic evaluation and optimization.

As the range of feedstocks, process technologies and products expand, biorefineries will become increasingly complex manufacturing systems. Biorefineries

Processes: Design, Integration and Sustainability Analysis presents process modelling and integration, and whole system life cycle analysis tools for the synthesis, design, operation and sustainable development of

biorefinery and chemical processes. Topics covered include: Introduction: An introduction to the concept and development of biorefineries. Tools: Included here are the methods for detailed economic and environmental impact analyses; combined

economic value and environmental impact analysis; life cycle assessment (LCA); multi-criteria analysis; heat integration and utility system design; mathematical programming based optimization and genetic algorithms. Process synthesis and

design: Focuses on modern unit operations and innovative process flowsheets. Discusses thermochemical and biochemical processing of biomass, production of chemicals and polymers from biomass, and processes for carbon

dioxide capture. Biorefinery systems: Presents biorefinery process synthesis using whole system analysis. Discusses bio-oil and algae biorefineries, integrated fuel cells and renewables, and heterogeneous catalytic reactors. Companion website:

Four case studies, additional exercises and examples are available online, together with three supplementary chapters which address waste and emission minimization, energy storage and control systems, and the optimization and

reuse of water. This textbook is designed to bridge a gap between engineering design and sustainability assessment, for advanced students and practicing process designers and engineers.

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 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).

Volume 3B: Process Control

Chemical Process Engineering

Chemical Engineering Economics

Chemical Engineering Economics; 4th Ed

Design And Economics

The Chemical Process

Industries

Infrastructure

Chemical Engineering Economics and Decision Analysis

Engineering Economics , Reprints from Chemical Engineering 1973 thru 1974

least, the author wishes

to thank his constantly helpful wife Maggie and his secretary Pat Weimer; the former for her patience, encouragement, and for acting as a sounding-board, and the

latter who toiled endlessly, cheerfully, and most competently on the book's preparation.

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Working Capital / 40 Revised and updated to reflect major changes in the field, this second edition presents an integrated and balanced view of current

attitudes and practices used in sound economic decision-making for engineering problems encountered in the oil industry. The volume contains many

problem-solving examples demonstrating how economic analyses are applied to different facets of the oil industry.; Discussion progresses

from an introduction to the industry, through principles and techniques of engineering economics, to the application of economic

methods to the oil industry. It provides information on the types of crude oils, their finished products and resources of natural gas, and also summarizes

worldwide oil production and consumption data.
Process Industry Economics: Principles, Concepts and Applications, Second Edition,

explores the fundamentals of market evaluation, capital and operating cost estimation, and profitability evaluation, along with their

implications for process technology evaluation, project development and investment decisions. Sections cover time dependent technology evolution in

process plants, including scale development, performance improvement in new and operating plants, and learning related to

environmental, safety and sustainability assessments. Influences on capital investment decisions, including capacity planning and environmental

considerations are explored and supported by case studies. Finally, the aspects of overall industry performance and drivers are discussed.

Outlines the basic principles of economic evaluation Identifies the roles of engineering, scientific, commercial and management personnel in

contributing to economic evaluation Explores the interaction of economics with safety, environmental and sustainability criteria in project

evaluation This book gives engineers the fundamental theories, equations, and computer programs (including source codes) that provide a

ready way to analyze and solve a wide range of process engineering problems. Engineers often find themselves tasked with the difficult

challenge of developing a design that is both technically and economically feasible. A sharply focused, how-to book, Engineering

Economics and Economic Design for Process Engineers provides the tools and methods to resolve design and economic issues. It helps you

integrate technical and economic decision making, creating more profit and growth for your organization. The book puts methods that

are simple, fast, and inexpensive within easy reach. Author Thane Brown sets the stage by explaining the engineer's role in the creation of economically

feasible projects. He discusses the basic economics of projects – how they are funded, what kinds of investments they require, how revenues,

expenses, profits, and risks are interrelated, and how cash flows into and out of a company. In the engineering economics section of the

book, Brown covers topics such as present and future values, annuities, interest rates, inflation, and inflation indices. He details how to

create order-of-magnitude and study grade estimates for the investments in a project and how to make study grade production cost

estimates. Against this backdrop, Brown explores a unique scheme for producing an Economic Design. He demonstrates how using the Economic

Design Model brings increased economic thinking and rigor into the early parts of design, the time in a project’s life when its cost structure is

being set and when the engineer’s impact on profit is greatest. The model emphasizes three powerful new tools that help you create a

comprehensive design option list. When the model is used early in a project, it can drastically lower both capital and production costs. The

book's uniquely industrial focus presents topics as they would happen in a real work situation. It shows you how to combine technical and economic

decision making to create economically optimum designs and increase your impact on profit and growth, and, therefore, your

importance to your organization. Using these time-tested techniques, you can design processes that cost less to build and operate, and improve your

company's profit.

Contemporary Engineering Economics Principles, Practice and Economics of Plant and Process Design Function and Economics

Principles of Engineering Economics with Applications Chemical Engineering Economics. 2. Ed. 5. Impr Chemical Process Economics Biorefineries

Processes Petroleum Economics and Engineering

A revision of the classic text-reference for the chemical engineering "design" course usually offered to all Chemical Engineers at the junior/senior level. This new edition contains the

latest cost data as well as new emphasis on safety and H42OPS and a new chapter on Computer-Aided Design. The book nicely balances both economics (cost estimating and cost data) and process equipment design in one text.

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. 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.

Coulson and Richardson ' s Chemical Engineering: Volume 3B: Process Control, Fourth Edition, covers reactor design, flow modeling, and gas-liquid and gas-solid reactions and reactors. Converted from

textbooks into fully revised reference material Content ranges from foundational through to technical Added emerging applications, numerical methods and computational tools Outlines the concepts of chemical engineering so that non-chemical engineers can interface with and understand basic chemical

engineering concepts Overviews the difference between laboratory and industrial scale practice of chemistry, consequences of mistakes, and approaches needed to scale a lab reaction process to an operating scale Covers basics of chemical reaction eningeering, mass, energy, and fluid energy balances, how

economics are scaled, and the nature of various types of flow sheets and how they are developed vs. time of a project Details the basics of fluid flow and transport, how fluid flow is characterized and explains the difference between positive displacement and centrifugal pumps along with their limitations and safety

aspects of these differences Reviews the importance and approaches to controlling chemical processes and the safety aspects of controlling chemical processes, Reviews the important chemical engineering design aspects of unit operations including distillation, absorption and stripping,

adsorption, evaporation and crystallization, drying and solids handling, polymer manufacture, and the basics of tank and agitation system design Provides a modern presentation that eliminates the seven limitations of past and present engineering economics texts: Contains the

12-FACTOR Calculator, an Excel spreadsheet designed by author to provide the values of the 12 factors of engineering economics for arbitrary values of i, g ( ), and N Contains the ANNUAL and PRESENT WORTH COMPARISON Calculators with Component Replacements forcomparing equipment

purchase quotations Defines quasi-simple investments and presents a Step-by-Step procedure for calculating their IRRs and balances Presents a classification of the four common non-simple investments and provides Step-by-Step procedures for calculating their IRRs and balances Compares the different profitability

measures for the same investment: pretax IRR, aftertax IRR, aftertax sensitivity analysis, net present value, accounting rate of return, benefit-cost ratio, and payback period

Chemical Project Economics

Coulson and Richardson ' s Chemical Engineering

Chemical Engineering

for Non-Chemical Engineers
Plant Design and Economics for Chemical Engineers
Fundamentals of Engineering Economics
Chemical Engineering Economics ... Fourth edition [of the work by C. Tyler].
A Guide to Chemical Engineering Process Design and Economics

Chemical Engineering Design

Upper-level undergraduate text for process design courses in chemical engineering. Introduces students to the technology and terminology they will encounter in industrial practice. Presents short-cut

techniques for specifying equipment or isolating important elements of a design project. Emphasizes project definition, flow sheet development and equipment specification. Covers the economics of

process design. End-of-chapter exercises guide students through step-by-step solutions of design problems. Includes four case studies from past AICHE competitions.
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. This reference outlines the fundamental concepts and strategies for economic assessments for informed management decisions in

industry. The book illustrates how to prepare capital cost and operating expense estimates, profitability analyses, and feasibility studies, and how to execute sensitivity and uncertainty assessments. From financial reports to

opportunity costs and engineering trade-offs, Process Engineering Economics considers a wide range of alternatives for profitable investing and for projecting outcomes in various chemical and engineering fields. It also

explains how to monitor costs, finances, and economic limitations at every stage of chemical project design, preparation, and evaluation. Establish your professional credentials as a registered P.E. withChemical

Engineering A Review for the P.E. Exam The only P.E. examguide that conforms to the new NCEE guidelines! * Guides you step-by-step through every topic covered in theexam. * Follows NCEE question format and subject emphasis. * Practice

exercises and problems, problem-solving strategies, andsolutions. * Detailed coverage of thermodynamics, process design, masstransfer, heat transfer, chemical kinetics, fluid flow, andengineering economics.

Chemical

Engineering Review for PE Exam
Process Industry Economics
Principles, Concepts and Applications
Engineering Economics and Economic Design for Process Engineers
Fortran Programs for Chemical

Process Design, Analysis, and Simulation Process Engineering Economics