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Electric power engineering
education traditionally covers

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safety of the power equipment and systems. Little attention, if any, is given to the safety of people. When they reach professional status, most power engineers are not familiar with electric safety

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issues such as practices governing site works or grounding techniques of dwellings, hospitals, and factories. Designed for both electrical engineering student and practicing power

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engineers, Electric Safety: Practice and Standards provides the knowledge and analysis they need to be well versed in electric safety. Features: Includes techniques to assess safety practices at

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worksites and provides remedies to correct safety problems Addresses the elusive stray voltage problem and provides techniques to mitigate its impact in dwellings as well as in

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sensitive installations such as hospitals and dairy farms
Provides approximate, yet accurate, analyses and techniques that can be used to assess electric safety without the need for extensive

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computation or elaborate
programs Includes several
case studies from real events
and examples demonstrating
how variations in electric
safety procedure
implementation influence

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safety levels Based on the authors' years of experience as an expert witness and electric safety training instructor, the book covers the analysis of electric safety practices as well as the

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interpretations of various safety codes. Including homework problems and a solutions manual, this book is a comprehensive guide to recognize and eliminate hazards of electric shocks for

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professionals working on electric power equipment, as well as people such as the general public in commonly used places, farms workers and animals, and hospital patients.

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Introduction to Process Engineering and Design covers basic principles to design alternate systems, develop process diagrams and select the best alternative to be adopted. Multiple industrial

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examples provided in the book will enhance the skills of the readers for innovative designs. Salient Features: • Focuses on process design of chemical plants and equipment • State-of-the-art

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view of chemical engineering design, this book provides as much, if not more, than any other book available on the topic. --Extract from Chemical Engineering Resources review. Chemical Engineering

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The fourth edition of Ludwig's Applied
Process Design for Chemical and
Petrochemical Plants, Volume Three is

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a core reference for chemical, plant, and process engineers and provides an unrivalled reference on methods, process fundamentals, and supporting design data. New to this edition are expanded chapters on heat transfer plus additional chapters focused on the design of shell and tube heat

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exchangers, double pipe heat exchangers and air coolers. Heat tracer requirements for pipelines and heat loss from insulated pipelines are covered in this new edition, along with batch heating and cooling of process fluids, process integration, and industrial reactors. The book also

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More than ever, effective design is the

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moves readers beyond classroom exercises into open-ended, real-world process problem solving. The authors introduce integrated techniques for every facet of the discipline, from finance to operations, new plant design to existing process optimization. This fully updated Third

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Edition presents entirely new problems at the end of every chapter. It also adds extensive coverage of batch process design, including realistic examples of equipment sizing for batch sequencing; batch scheduling for multi-product plants; improving production via intermediate storage

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and parallel equipment; and new optimization techniques specifically for batch processes. Coverage includes Conceptualizing and analyzing chemical processes: flow diagrams, tracing, process conditions, and more Chemical process economics: analyzing capital and manufacturing

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Process troubleshooting

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The book begins by introducing the quantitative approach to development economics. Each section uses data to illustrate key policy issues. Part One focuses on the basics of understanding the role of education, technology and institutions in determining why incomes differ so

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gets private schooling and whether property rights enhance investment. A distinctive feature of the book is its presentation of a range of approaches to studying development questions. Development economics has undergone a major change in focus over the last decade with the rise of

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experimental methods to address development issues; this book shows how these methods relate to more traditional ones. Please visit the book's website for more information:

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A Manual of Quick, Accurate Solutions
to Everyday Process Engineering

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Problems

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Principles, Practice and Economics of
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Principles

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The component parts of a manufacturing system are important. Without peripherals and services such as pumps, boilers, power transmission, water treatment, waste disposal, and efficient lighting, the system will collapse. Food Plant Engineering Systems, Second Edition fills the need for a reference dealing with the bits and

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pieces that keep systems
Separation processes on an industrial scale account for well over half of the capital and operating costs in the chemical industry. Knowledge of these processes is key for every student of chemical or process engineering. This book is ideally suited to university teaching, thanks to its

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wealth of exercises and solutions. The second edition boasts an even greater number of applied examples and case studies as well as references for further reading.

A fundamental introduction to modern game theory from a mathematical viewpoint Game theory arises in almost

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every fact of human and inhuman interaction since oftentimes during these communications objectives are opposed or cooperation is viewed as an option. From economics and finance to biology and computer science, researchers and practitioners are often put in complex decision-making

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scenarios, whether they are interacting with each other or working with evolving technology and artificial intelligence.

Acknowledging the role of mathematics in making logical and advantageous decisions, *Game Theory: An Introduction* uses modern software applications to create, analyze, and implement effective

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decision-making models. While most books on modern game theory are either too abstract or too applied, this book provides a balanced treatment of the subject that is both conceptual and hands-on. Game Theory introduces readers to the basic theories behind games and presents real-world examples from various

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fields of study such as economics, political science, military science, finance, biological science as well as general game playing. A unique feature of this book is the use of Maple to find the values and strategies of games, and in addition, it aids in the implementation of algorithms for the solution or visualization of game

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concepts. Maple is also utilized to facilitate a visual learning environment of game theory and acts as the primary tool for the calculation of complex non-cooperative and cooperative games.

Important game theory topics are presented within the following five main areas of coverage: Two-person zero sum

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matrix games Nonzero sum games and the reduction to nonlinear programming Cooperative games, including discussion of both the Nucleolus concept and the Shapley value Bargaining, including threat strategies Evolutionary stable strategies and population games Although some mathematical competence is assumed,

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appendices are provided to act as a refresher of the basic concepts of linear algebra, probability, and statistics. Exercises are included at the end of each section along with algorithms for the solution of the games to help readers master the presented information. Also, explicit Maple and Mathematica®

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commands are included in the book and are available as worksheets via the book's related Website. The use of this software allows readers to solve many more advanced and interesting games without spending time on the theory of linear and nonlinear programming or performing other complex calculations.

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With extensive examples illustrating game theory's wide range of relevance, this classroom-tested book is ideal for game theory courses in mathematics, engineering, operations research, computer science, and economics at the upper-undergraduate level. It is also an ideal companion for anyone who is

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interested in the applications of game theory.

Fundamentals of Economics for Applied
Engineering

An Introduction

Evidence, Theory, and Welfare

Process Plant Simulation

Solution Manual to Accompany

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Engineering has changed dramatically in the last century. With modern computing systems, instantaneous communication, elimination of low/mid management, increased complexity, and extremely

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efficient supply chains, all have dramatically affected the responsibilities of engineers at all levels. The future will require cost effective systems that are more secure, interconnected, software centric, and complex.

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Employees at all levels need to be able to develop accurate cost estimates based upon defensible cost analysis. It is under this backdrop that this book is being written. By presenting the methods, processes, and tools

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needed to conduct cost analysis, estimation, and management of complex systems, this textbook is the next step beyond basic engineering economics.

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materials beyond basic engineering economics, such as simulation-based costing
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real-life examples Provides excel based textbook/problems Offers PowerPoint slides, Solutions Manual, and author website with downloadable excel solutions, etc.

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eBook update of Product and Process Design Principles contains many new resources and supplements including new videos, quiz questions with answer-specific feedback, and real-world case studies to

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design are interlinked and their importance for modern applications. Presenting a systematic approach, this fully-updated new edition describes modern strategies for the design of chemical products and

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chapters cover the products and processes of design synthesis, design analysis, and design reports. The final part of the book presents ten case studies which look at product and process designs such as for Vitamin C

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related topics for a course on Process Plant Simulation that is offered for undergraduates both in India and abroad. It would also be useful for students pursuing courses like optimisation techniques, mathematical

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methods in chemical engineering
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Over the last 20 years,
fundamental design concepts
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'green' attributes. Generic systematic methods are employed, supported by intensive use of computer simulation as a powerful tool for mastering the complexity of physical models. New to the second edition are chapters on product design and batch processes with

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applications in specialty chemicals, process intensification methods for designing compact equipment with high energetic efficiency, plantwide control for managing the key factors affecting the plant dynamics and operation, health, safety and environment issues, as

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processes Presents generic principles of process simulation for analysis, creation and assessment Emphasis on sustainable development for the future of process industries

Research in macroeconomics in the last thirty years has featured, almost

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exclusively on two characteristics: an emphasis on the microfoundations of macroeconomics and secondly, intertemporal economics, that is, the behavior of economic actors over time. Curiously, textbooks in intermediate macroeconomics have been very slow to

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adopt these traits. The aim of this book is to bring intermediate instruction in macroeconomics fully into line with the direction taken by the research community. Key hallmarks of the text include: a full introduction to the microfoundations of consumption and

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investment a complete model of the labor market with profit maximization for firms to determine labor demand and a utility maximization model to determine labor supply an analysis of the Baumol-Tobin model to determine money demand accompanied by a discussion of

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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.

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home use. It is divided into nine chapters and seven annexes, with each chapter dedicated to an individual module of aquaponics. The target audience for this manual is agriculture extension agents, regional fisheries officers, non-governmental organizations, community organizers,

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government ministers, companies and singles worldwide. The intention is to bring a general understanding of aquaponics to people who previously may have only known about one aspect.

This text explains the concepts behind process design. It uses a case study

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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

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supplements including PowerPoint slides, computer codes supplements, an Instructor's Manual and Solutions Manual are available for instructors. This textbook is suitable for upper-level undergraduate and graduate courses on financial economics,

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researchers, and those in chemical engineering. The book includes a new section on sustainable energy, with sections on carbon capture and sequestration, as a result of increasing environmental awareness; and a companion website that includes

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problems, worked solutions, and Excel spreadsheets to enable students to carry out complex calculations.

Cryogenics, a term commonly used to refer to very low temperatures, had its beginning in the latter half of the last century when man learned, for the

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first time, how to cool objects to a temperature lower than had ever existed naturally on the face of the earth. The air we breathe was first liquefied in 1883 by a Polish scientist named Olszewski. Ten years later he and a British scientist, Sir James

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Dewar, liquefied hydrogen. Helium, the last of the so-called permanent gases, was finally liquefied by the Dutch physicist Kamerlingh Onnes in 1908. Thus, by the beginning of the twentieth century the door had been opened to a strange new world of

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experimentation in which aB substances, except liquid helium, are solids and where the absolute temperature is only a few microdegrees away. However, the point on the temperature scale at which refrigeration in the ordinary

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sense of the term ends and cryogenics begins has never been well defined. Most workers in the field have chosen to restrict cryogenics to a temperature range below -150°C (123 K). This is a reasonable dividing line since the normal boiling points of the more

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permanent gases, such as helium, hydrogen, neon, nitrogen, oxygen, and air, lie below this temperature, while the more common refrigerants have boiling points that are above this temperature. Cryogenic engineering is concerned with the design and

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