

## ADQUISICIONES BOLETÍN # 1- 2004

35508     **B105 C473L48**  
            **ROGER LEWIN**  
            **COMPLEXITY: *Life at the edge of Chaos.*** Edita: The University Of  
            Chicago Press. 1999.

35630     **BF441 F57**  
            **ALEC FISHER**  
            **CRITICAL THINKING. *An Introduction.*** Edita: Cambridge University  
            Press.2001.

**Critical Thinking:** An introduction aims to teach critical thinking skills – the ability to interpret, analyse and evaluate ideas and argument. Alice Fisher’s approach is based on a widely shared conception of critical thinking and covers many of the basic skills or competencies displayed by good critical thinkers. The book aims to develop critical thinking skills by teaching them explicitly and directly, rather than indirectly.

Although produced for students following courses in schools, college and universities, the book is also suitable for self-study.

35500     **GN60 B63**  
            **NOEL T. BOAZ**  
            **BIOLOGICAL ANTHROPOLOGY.** Edita: Prentice Hall. 1997

This book has been a long time in the making. It represents not only what we hope will be a useful approach to the teaching of human evolution at the introductory college and university level, but also a new restatement of the coherency and fundamental compatibility of all the many and varied subdisciplines in which biological anthropologists have become specialized. In all, there is the uniting thread of evolution by natural selection, which forms the basic paradigm of our discipline. The subtitle of the volume underlines this concept by using the term “synthetic” to define our approach. Our hope is that our exposition does justice to the elegant theoretical framework of modern biological anthropology and that we have succeeded in communicating the exciting diversity so apparent in this rapidly developing field.

35572

**HB171 B5318**

**MARK BLAUG**

**TEORIA ECONOMICA EN RETROSPECCIÓN. Edita: Fondo de Cultura Económica. 2001.**

Durante más de 30 años, este libro ha sido reputado como una obra sin precedentes acerca de la historia del pensamiento económico. Así ha sido porque se trata de una historia con dos raras características: primera, consiste en un análisis crítico de las teorías económicas más importantes, sin diluirse en digresiones históricas o coloraciones biográficas, y segunda, provee al lector de una guía detallada sobre los trabajos de Adam Smith, David Ricardo, J. S. Mill, Marx, Marshall, Wicksteed, Wicksell, Walras y Keynes. Más aún, es un esfuerzo por alentar a los estudiantes a familiarizarse rápidamente con los escritos de los economistas de más relieve.

35387

**HB172 N5318**

**WALTER NICHOLSON**

**TEORÍA MICROECONÓMICA: Principios Básicos y Aplicaciones. Edita: McGraw-Hill, 1997.**

El propósito de la sexta edición es, al igual que en las anteriores, ofrecer a los estudiantes un enfoque exhaustivo, aunque accesible, de la Microeconomía moderna. Este objetivo se logra ofreciendo explicaciones intuitivas de los principales resultados y destacando las estructuras matemáticas comunes (como la conducta maximizadora y las propiedades de equilibrio) de muchos problemas económicos. De entre las principales modificaciones destacan. Revisión en profundidad de los capítulos dedicados a la incertidumbre y a la información. Nuevo capítulo sobre modelos competitivos aplicados. Análisis revisado y ampliados de la discriminación de precios con una introducción a la reciente literatura sobre el tema. Reelaboración del capítulo sobre la elección pública con la introducción de nuevo material sobre los modelos de votación en los sistemas políticos de representación y sobre la conducta de búsqueda de rentas económicas. Inclusión de numerosos problemas nuevos libros, muchos de los cuales ofrecen resultados teóricos adicionales.

35400

**HB172 P56**

**ROBERT S. PINDY**

**MICROECONOMICS. Edita. Prentice-Hall, 1995.**

For students who care about how the world works, microeconomics is one of the most relevant and interesting subjects they study. A good grasp of microeconomics is vital for managerial decision making, for designing and

under standing public policy, and more generally for appreciating how a modern economy functions.

- 35626     **HB172.5 S56**  
            **RONALD SHONE**  
            **AN INTRODUCTION TO ECONOMIC DYNAMICS. Edita Cambridge University Press 2001.**

It is now widely accepted that economics has to be studied from a dynamics perspective. In general, the methods of dynamics economics are difficult and accessible only to students having a reasonably advanced level of mathematical training. A introduction to Economic Dynamics by Ronald Shone does a rice job of marking the basic ideas of dynamic economics available to a wider range of students by using spreadsheets. It proceeds primarily by example, taken from a wide area of economics. This grounding of the methods in real-world examples provides a much livelier discussion for students and presents an innovative introduction to the more advanced methods of economic analysis.

- 35557     **HG176.5 B73**  
            **PAOLO BRANDIMARTE**  
            **NUMERICAL METHODS IN FINANCE A MATLAB-Based Introduction**  
            **Edita: John Wiley & Sons, Inc 2002.**

Numerical Methods in Finance bridges the gap between financial theory and computational practice while helping students and practitioners exploit MATLAB for financial applications

Paolo Brandimarte covers the basics of finance and numerical analysis and provides background material that suits the needs of students from both financial engineering and economics perspectives. Classical numerical analysis methods, optimization including less familiar topics such as stochastic and integer programming, simulation, including, low discrepancy sequences, and partial differential equations are covered in detail, Extensive illustrative examples of the application of all of these methodologies are also provided.

- 35538     **KF3790 F74**  
            **MARTIN FREEDMAN**  
            **AIR AND WATER POLLUTION REGULATION: Accomplishments and Economics Consequences.** Edita: Quorum Books.

After over 20 years of federal air and water pollution regulations and billions of dollars being spent in the United States in the pursuit of cleaner air and water, certain conclusions are apparent. Clean air and water and a healthy economy are not mutually exclusive goals: It is possible to have cleaner air and water and still maintain a viable economic system.

35506

**Q21.2 S26**

**T.R. SANDIN**

**MODERN PHYSICS. Edita: Addison-Wesley Publishing Co.**

Near the end of the nineteenth century, the story has it, a famous physicist stated very publicly that physics had advanced to the point where essentially all the law of nature were understood. He claimed that the only thing that physicists could look forward to was increasing the accuracy of their measurements. The twentieth century of the engineer, the time for taking those known laws of physics and using them to design new devices and refine old ones. After 1900, physicists would simply spend their years finding already known values to one more significant figure.

35587

**Q161.2 K73**

**KONRAD B. KRAUSKOPF**

**THE PHYSICAL UNIVERSE. Edita: Mc Graw-Hill, 2000. ISBN 0072284153.**

There is a reason why

Krauskopf and Beiser's **The Physical Universe** has been so successful over the years. It continues to live up to its user's expectations, providing excellent coverage of chemistry, physics earth science, and astronomy. The text's consistent focus on the scientific method gives students and understanding of the processes behind scientific inquiry. Each text package includes the **free Study Guide**, a complete resource for review. Updated material in the ninth edition keeps you on top of the latest science breakthroughs.

35472

**Q172.5 C45B43**

**CHRISTIAN BECK**

**THERMODYNAMICS OF CHAOTIC Y SISTEMAS: *An introduction.* Edita: Cambridge University Press. 1993. ISBN 0521484510**

This book deals with the various thermodynamic concepts used for the analysis of nonlinear dynamical systems. The most important concepts are introduced in

such a way as to stress the interconnections with thermodynamics and statistical mechanics.

- 35471      **Q247 C64**  
**HARVEY COHN**  
**INTRODUCTION TO THE CONSTRUCTION OF CLASS FIELDS.**  
**Edita: Dover Publications. 1994. ISBN 0486683460**

This advanced-level text is built around the answer to a question that might have been asked by Pythagoras: How do we characterize the prime value of the hypotenuse when the area of the right triangle is divisible by 4, 8, 16 or any higher power of 2? The answer involves the construction of class fields by means of transcendental functions.

- 35453      **Q295 S48**  
**FRANK L. SEVERANCE, Ph.D.**  
**SYSTEM MODELING AND SIMULATION: *An Introduction.* Edita: John Wiley & Sons.2001. ISBN 0471496944**

What is system modeling?

System modeling the process of describing both natural and engineered system in precise mathematical terms.

What is simulation?

Simulation is the exploitation of a model in order to predict logical consequences of hypothetical situations.

- 35639      **QA9.64 Y46**  
**JOHN YEN AND REZA LANGARI**  
**FUZZY LOGIC. *Intelligence, Control, and Information.* Edita: Prentice Hall, 1998. ISBN 0135258170.**

“**Superb.** This one-word assessment summarizes my view of **Fuzzy Logic: Intelligence, Control, and Information**, (or FL:ICI for short)—a long-awaited text by Professors John Yen and Reza Langari. Wirtten with authority and high expository skill, FL: ICI reflects the extensive experience of its authors in both teaching and research in fuzzy logic and related fields, ... FL:ICI is in every respect an outstanding contribution to the literature of fuzzy logic and soft computing, and is a must for anyone who is interested in the conception, design, and utilization of information/intelligent/control systems.”

35598      **QA37.3 G37**  
**THOMAS A. GARRITY**  
**ALL THE MATHEMATICS YOU MISSED.** *But Nedd to Know for Graduate School.* Edita: Cambridge University Press. ISBN 0521797078.

Beginning graduate students in mathematics and other quantitative subjects are expected to have a daunting breadth of mathematical knowledge, but few have such a background. This book will help students see the broad outline of mathematics and to fill in the gaps in their knowledge.

35677      **QA39 R6**  
**KENNETH H. ROSEN**  
**DISCRETE MATHEMATICS AND ITS APPLICATIONS.** Edita: McGraw-Hill, 1999. ISBN 0071167560.

35570      **QA39.2 J6518**  
**RICHARD JOHNSONBAUGH**  
**MATEMATICAS DISCRETAS.** Edita: Pearson Educación. 1999. ISBN 9701702530.

Matemáticas discretas es una obra diseñada para un curso de introducción al tema, de uno o dos semestres. Para comprender este texto no es necesario saber cálculo ni computación. Los ejemplos, los ejercicios, las figuras, las tablas, las soluciones de los problemas, las notas, las secciones de repaso y autoevaluación de cada capítulo ayudarán al estudiante a dominar las matemáticas discretas básicas.

35483      **QA76 S54**  
**TOM SIEGFRIED**  
**THE BIT AND THE PENDULUM:** *From Quantum Computing to M Theory – The New Physics of Information.* Edita: John Wiley & Sons. 2000.

Now in paperback, The Bit and the Pendulum explores the radical idea at the center of the new physics of information: everything in the universe, from the molecules in our bodies to the heart of a black hole, is made up of bits of information. Award-winning author Tom Siegfried interviews top scientists- all using “bits” to solve the seemingly unsolvable- and provides a highly accessible introduction to a fundamentally new way of seeing the world. Lively, engaging, and topical. The Bid and the Pendulum shows the computer and the

“bit” are revealing secrets of the brain, the nature of matter, and the workings of the universe.

- 35563      **QA76.6 B33**  
**SARA BAASE**  
**COMPUTER ALGORITHMS. *Introduction to Design and Analysis* Edita: Addison-Wesley, 2000. ISBN 0201612445.**

Drawing upon combined decades of teaching experience, Professors Sara Baase and Allen Van Gelder have extensively revised this best seller on algorithm design and analysis to make it the most current and accessible book available. This edition features an increased emphasis on algorithm design techniques such as divide-and-conquer and greedy algorithms, along with the addition of new topics exercises. It continues the tradition of solid mathematical analysis and clear writing style that made this book so popular in previous editions.

- 35550      **QA76.625 D45**  
**H. M. DEITEL**  
**INTERNET & WORLD WIDE WEB. *How To Program* .Edita: Prentice, Hall. 2002.**

The Internet and World Wide have revolutionized software development with multimedia-intensive, platform-independent code for conventional Internet-, Intranet- and Extranet-based applications. This college-level textbook carefully explains how to program multitiered, client/server, database-intensive, Web-based applications.

- 35402      **QA76.73 C15K64**  
**STEPHEN G. KOCHAN AND PATRICK H. WOOD.**  
**TOPICS IN C PROGRAMMING. *Revised Edition* Edita. John Wiley & Sons, Inc., 1991. ISBN 0471534048**

Topics in C Programming, Revised Edition is designed to teach computer programmers how to program in this powerful, yet easy to –master language. This volume is the best single-source guide available for detailed treatment of advanced C programming for the UNIX environment.

35537

**QA76.73 J38L42**

**DOUG LEA**

**CONCURRENT PROGRAMMING IN JAVA . *Design Principles and Patterns.* Edita: Sun Microsystems. 2000. ISBN 0201310090.**

In this second edition, you will find complete coverage of concurrent programming using the Java 2 platform and new or expanded coverage of.

- .Memory model
- Cancellation
- Portable parallel programming
- Utility classes for concurrency control.

The Java platform provides a broad and powerful set of APIs, tools, and technologies. One of its most powerful capabilities is the built in support for threads. This makes concurrent programming an attractive yet challenging option for programmers using the Java programming language.

35678

**QA76.73 J38S24**

**SARTAJ SAHNI**

**DATA STRUCTURES, ALGORITHMS, AND APPLICATIONS IN JAVA. Edita McGraw-Hill 2000. ISBN0071169008**

Data Structures, Algorithms and Applications in Java provides comprehensive coverage of fundamental data structures, making it ideal for use in a c52 course, sahni has made this text the most student friendly of all his text books by using a gentle introduction providing intuitive discussions and including real-world applications.

35558

**QA76.87 H39**

**SIMON HAYKIN**

**NEURAL NETWORKS. *A comprehensive Foundation.* Edita: Prentice Hall. 1999.**

Neural Networks, or artificial neural networks to be more precise, represent a technology that is rooted in many disciplines: neurosciences, mathematics, statistics, physics, computer science, and engineering. Neural networks find applications in such diverse fields as modeling, time series analysis, pattern recognition, signal processing, and control by virtue of an important property: the ability to learn from input data with or without a teacher.

35493      **QA76.9 A25D44**  
**HANS DELFS**  
**INTRODUCTION TO CRYPTOGRAPHY.** *Principles and Applications.*  
**Edita: Springer. ISBN 3540422781**

Due to the rapid growth of digital communication and electronic data exchange, information security has become a crucial issue in industry, business, and administration. Modern cryptography provides essential techniques for securing information and protecting data.

35613      **QA76.9 A25W34**  
**SAMUEL S. WAGSTAFF, JR.**  
**CRYPTANALYSIS OF NUMBER THEORETIC CIPHERS.** **Edita:**  
**Chapman & Hall/CRC. 2003. ISBN 1584881534.**

At the heart of modern cryptographic algorithms lies computational number theory. Whether you are making or break-ing ciphers, a solid background in number theory is essential for success. Written by a number theorist and practicing cryptographer. **Cryptanalysis of Number Theoretic Ciphers**, takes you from basic number theory to the inner workings of ciphers and protocols.

35468      **QA93 P43**  
**DAN PEDOE**  
**THE GENTLE ART OF MATHEMATICS.** **Edita Dover Publications.**  
**1973. ISBN 0486229491**

Professor Dan Pedoe uses a variety of practical applications and puzzles in taking a pleasantly light-hearted look at today's mathematical trends. He is comfortable illuminating such dark mysteries as the notion of infinity, the laws of probability and the algebra of

35609      **QA155.7 E4G37**  
**FRANK GARVAN**  
**THE MAPLE BOOK.** **Edita: Chapman & Hall/CRC. 2002. ISBN**  
**1584882328.**

MAPLE is a very powerful computer algebra system used by students, educators, mathematicians, statisticians, scientists, and engineers for doing numerical and symbolic computations. Greatly expanded and updated from the

author's MAPLE V Primer, **The Maple Book** offers extensive coverage of the latest version of this outstanding software package.

35470

**QA162 M39**

**JOHN MAXFIELD**

**ABSTRACT ALGEBRA AND SOLUTION BY RADICALS.** Edita: Dover Publications. 1992.

This easily accessible, well-written introductory textbook is designed students at the advanced undergraduate level. It begins with standard material on groups, rings, fields and polynomials and culminates with Galois theory and the proof of the unsolvability by radicals of the general of degree  $\geq 5$ .

35628

**QA164 L57**

**J.H.VAN LINT**

**A COURSE IN COMBINATORICS.** Edita: Cambridge University Press. 2001.

This is the second edition of a popular book on combinatorics, a subject dealing with ways of arranging and distributing objects, and which involves ideas from geometry, algebra and analysis. The breadth of the theory is matched by that of its applications, which include topics as diverse as codes, circuit design and algorithm complexity. It has thus become essential for workers in many scientific fields to have some familiarity with the subject. The authors have tried to be as comprehensive as possible, dealing in a unified with, for example, graph theory, extremal problems, designs, colorings and codes. The depth and breadth of the coverage make the book a unique guide to the whole of the subject. The book is ideal for courses on combinatorial mathematics at the advanced undergraduate or beginning graduate level. Working mathematicians and scientists will also find it a valuable introduction and reference.

35603

**QA164 R43**

**RECENT TRENDS IN COMBINATORICS.** Edita: Cambridge University Press. 2001. ISBN 0521801706.

This is a collection of surveys and research papers on recent topics of interest in combinatorics, given at a conference in Mátraháza, Hungary. Originally published in journal form, it is here reissued as a book due to its special interest. It is dedicated to Paul Erdős, who attended the conference and who is represented by two articles in the collection, including one, unfinished, which he

was writing on the eve of his sudden death. Erdős was one of the greatest mathematicians of his century and often the subject of anecdotes about his somewhat unusual lifestyle.

35687      **QA184 S552**  
**GEORGI E. SHILOV**  
**LINEAR ALGEBRA. Edita: Dover Publications.1977 ISBN 0486635187**

In this volume in his exceptional series of translations of Russian mathematical texts, Richard Silverman has taken Shilov's course in linear algebra and has made it even more accessible and more useful for English Language readers.

35498      **QA184 W55**  
**RICHARD E. WILLIAMSON**  
**MULTIVARIABLE MATHEMATICS. Edita: Prentice. Hall. 1996.**

This book covers material that is usually studied after a first course in one-variable calculus, namely the algebra and geometry of vectors and matrices, multivariable and vector calculus, and differential equations including systems. The branches of these three areas are strongly intertwined and we've designed our treatment to display the connections effectively, at the same time maintaining flexibility for course scheduling. (Some specific possibilities are listed on page xv.)Broadly speaking, while the sequence of topics follows rather traditional lines of mathematical classification, the actual route taken may vary widely from course to course.

35691      **QA188 F66**  
**JOEL N. FRANKLIN**  
**MATRIX THEORY. Edita: Dover Publications, Inc. ISBN 0486411798.**

Not only is matrix theory significant in a wide range of fields mathematical economics, quantum physics, geophysics, electrical network synthesis, crystallography, and structural engineering, among others—but with the vast proliferation of digital computers, knowledge of matrix theory is a must for every modern engineer, mathematician, and scientist. Matrices represent linear transformations from a finite set of numbers to another finite set of numbers. Since many important problems are linear, and since digital computers with finite memory manipulate only finite sets of numbers, the solution of linear problems by digital computers usually involves matrices.

35703      **QA188 M37**  
**MARVIN MARCUS**  
**A SURVEY OF MATRIX THEORY AND MATRIX INEQUALITIES.**  
**Edita: Dover Publications, Inc. 1992. ISBN048667102X.**

Written for advanced undergraduate students, this highly regarded book presents an enormous amount of information in a concise and accessible format. Beginning with the assumption that the reader has never seen a matrix before, the authors go on to provide a survey of a substantial part of the field including many areas of modern research interest.

35429      **QA196 C65**  
**JOHN H. CONWAY**  
**ON QUATERNIONS AND OCTONIONS:** *Their Geometry, Arithmetic, and Symmetry.* **Edita: A. K Peters Natick, Massachusetts. 2002**

This book is about the **geometry** of the quaternion and octonion algebras. Following an historical introduction, the special properties of 3- and 4-dimensional Euclidean spaces are illuminated using quaternions, leading to enumerations of the corresponding finite groups of **symmetries**. The second part of the book discusses the less familiar octonion algebra, concentrating on its remarkable “triality symmetry” after an appropriate study of Moufang loops. The **arithmetics** of the quaternions and octonions are also described, and the book concludes with a new theory of octonion factorization.

35605      **QA214 B67**  
**FRANCIS BARCEUX**  
**GALOIS-THEORIES.** **Edita: Cambridge University Press. 2001. ISBN 0521803098.**

Starting from the classical finite dimensional Galois theory of fields, this book develops Galois theory in a much more general context, presenting work by Grothendieck in terms of separable algebras and then proceeding to the infinite dimensional case, which requires considering topological Galois groups. In the core of the book, the authors first formalize the categorical context in which a general Galois theorem holds, and then give some applications, to the topological theory of covering maps and to a Galois theorem for toposes.

- 35553      **QA221 M85**  
**MULTIVARIATE APPROXIMATION AND APPLICATIONS. Edita:**  
**Cambridge. 2001 ISBN 0521800234.**

Multivariate approximation theory is today an increasingly active research area. It encompasses a wide range of tools for multivariate approximation such as multi-dimensional splines and finite elements, shift-invariant spaces and radial-basis functions. The multivariate setting is important since it models many real-world problems. Approximation theory in this setting has many applications including numerical analysis, wavelet analysis, signal processing, geographic information systems, computer aided geometric design and computer graphics. The field is fascinating since much of the mathematics of the classical univariate theory does not straightforwardly generalize to the multivariate setting, so new tools are required.

- 35461      **QA241 D38**  
**H. DAVENPORT**  
**THE HIGHER ARITHMETIC. Edita: Cambridge University Press. 1999.**

“This book is an introduction to the theory of number which is suitable for a very wide class of readers. On the one hand, no extensive mathematical knowledge is required of the reader: in fact, a good high-school training in mathematics would be sufficient. On the other hand, the author discusses subjects of real mathematical interest and treats them in a very readable way, so that a person of considerable mathematical maturity would find much enjoyable and profitable reading in this work.

- 35726      **QA247.2 S37**  
**ING. JOSE LUIS SARABIA GONZALEZ**  
**LOS NÚMEROS COMPLEJOS. Apuntes. Edita: I.P.N.**

El presente trabajo incluye conocimientos básicos sobre los números complejos y establecen un método sencillo y accesible para los estudiantes de física, matemáticas e ingeniería de los niveles de bachillerato del tronco común y de ingeniería que previamente han llevado los cursos de álgebra, geometría, trigonometría y elementos de cálculo.

35577      **QA248 H36**  
**ANDRÁS HAJNAL**  
**SET THEORY.**    Edita: Cambridge University Press. 1999. ISBN  
**0521596671**

This is a classic introduction to set theory in three segments. This first part gives a general introduction to set theory, suitable for undergraduates; complete proofs are given and no background in logic is required. Exercises are included, and the more difficult ones are supplied with hints. An appendix to the first part gives a more formal foundation to axiomatic set theory supplementing the intuitive introduction given in the first part. The final part gives an introduction to modern tools of combinatorial set theory. This part contains enough material for a graduate course of one or two semesters. The subjects discussed include stationary sets.

35612      **QA251 S73**  
**IAN STEWART**  
**GALOIS THEORY.**    Edita: Chapman & Hall/CRC 2004. ISBN  
**1584883937.**

Ian Stewart's **Galois Theory** has been in print for 30 years. Resoundingly popular, it still serves its purpose exceedingly well. But mathematics education has changed considerably since 1973, when theory took precedence over examples, and the time has come to bring this presentation in line with more modern approaches.

35624      **QA273 R68**  
**SHELDON M. ROSS**  
**SIMULATION.** Edita: Academic Press. 2002

The third edition of Sheldon Ross' best-selling ***SIMULATION*** provides a practical introduction to constructing computerized simulations for analyzing and interpreting real phenomena. These simulations are applied to problems in a wide variety of fields, including actuarial science, engineering, mathematics, and physical sciences, to obtain effective, accurate solutions.

35389      **QA276 M4118**  
**DENNIS D. WACKERLY**  
**ESTADÍSTICA MATEMÁTICA CON APLICACIONES.** Edita: Thomson,  
**2002. ISBN 9706861947**

El lector tiene en sus manos el libro de estadística matemática más usado en las 200 universidades más importantes de Estados Unidos y en muchas más de América Latina.

Los autores aprovechan su experiencia académica y logran presentar la teoría de la estadística en el contexto de la solución de problemas y aplicaciones de la vida real. Usted descubrirá la naturaleza de la estadística y entenderá rápidamente su papel esencial en la investigación científica.

35579

**QA276.12 B59**

**ALLAN G. BLUMAN**

**ELEMENTARY STATISTICS. *A Step by Step Approach.* Edita: **Mc-Graw-Hill.** 2001**

Elementary Statistics. A Step by Step Approach is a textbook for students in the beginning statistics course whose mathematical background is limited to basic algebra. The book uses a nontheoretical approach in which concepts are explained intuitively and supported by examples. There are no formal proofs in the book. The applications are general in nature, and the exercises include problems from business, economics, health, medicine, science, engineering, social science, educations, and general interest.

35608

**QA276.12 H66**

**ROBERT HOOKE**

**HOW TO TELL THE LIARS FROM THE STATISTICIANS. Edita: **Marcel Dekker, Inc.** 1983.**

In plain English, this unique guide spotlights the effects of statistical reasoning and its misuse on our lives. It shows that, far from a dull subject involving incomprehensible numbers statistics is a fascinating, useful tool for nearly everyone facing the options and probabilities in decision making. In 76 succinct, self-contained, enlightening essays on such topics as smoking and cancer . . . risk taking in industry. . . unemployment. . . cost of living . . . science and statistics—and many more!—this unparalleled book ranges across a wide variety of areas, pointing out statistically incorrect arguments and dubious inferences. Simple and informative vignettes use real-life situations that run the gamut from everyday living to sports, business, and technology, and feature enteratining illustrations that highlight key points.

35463

**QA297 C54**

**GARY C. COHEN**

**HIGHER-ORDER NUMERICAL METHODS FOR TRANSIENT WAVE EQUATIONS. Edita: Springer. 2002**

Solving efficiently the wave equations involved in modeling acoustic, elastic or electromagnetic wave propagation remains a challenge both for research and industry. To attack the problems coming from the propagative character of the solution, the author constructs higher-order numerical methods to reduce the size of the meshes, and consequently the time and space stepping, dramatically improving storage and computing times. This book surveys higher-order finite difference methods and develops various mass-lumped finite (also called spectral) element methods for the transient wave equations, and presents the most efficient methods, respecting both accuracy and stability for each sort of problem.

35629

**QA297 H86**

**BRIAN R. HUNT**

**A GUIDE TO MATLAB. *For Beginners and Experienced Users.* Edita: Cambridge University Press. 2001. ISBN-0521008594.**

This book is a short focused introduction to MATLAB, a comprehensive software system for mathematics and technical computing. It will be useful to both beginning and experienced users. It contains concise explanations of essential MATLAB commands, as well as easily understood instructions for using MATLAB's programming features, graphical capabilities, and desktop interfaces. It also includes an introduction to SIMULINK, a companion to MATLAB for systems simulation.

35522

**QA297 L56**

**PETER LINZ**

**THEORETICAL NUMERICAL ANALYSIS. *An Introduction to Advanced Techniques.* Edita: Dover Publications, Inc. 2001.**

Since the advent of the digital computer, numerical analysis has become one of the important and frequently used tools of scientists and engineers faced with solving complex mathematical problems. This concise text introduces numerical analysis as a practical, problem-solving discipline

- 35631      **QA297 N48**  
**ARNOLD NEUMAIER**  
**INTRODUCTION TO NUMERICAL ANALYSIS.** Edita: Cambridge  
University Press. 2001. ISBN 0521336109.

Numerical Analysis is an increasingly important link between pure mathematics and its application in science and technology. This textbook provides an introduction to the justification and development of constructive methods that provide sufficiently accurate approximations to the solution of numerical problems, and the analysis of the influence that errors in data, finite-precision calculations, and approximation formulas have on results, problem formulation, and the choice of methods. It also serves as an introduction to scientific programming in MATLAB, including many simple and difficult, theoretical and computational exercises.

- 35706      **QA297.5 B78**  
**N. G. DE BRUIJN**  
**ASYMPTOTIC METHODS IN ANALYSIS.** Edita: Dover Publications,  
Inc. 1981. ISBN 0486642216

Asymptotics is not new. Its importance in many areas of pure and applied mathematics has been recognized since the days of Laplace. Asymptotic estimates of series, integrals and other expressions are commonly needed in physics, engineering and other fields. Unfortunately, for many years there was a dearth of literature dealing with this difficult but important topic.

- 35571      **QA303 A28**  
**ANTONIO ABURTO BARRAGÁN**  
**CÁLCULO DIFERENCIAL E INTEGRAL.** Edita: Limusa-Noriega.1998.  
ISBN 9681855558.

El presente título se destina primordialmente como auxiliar didáctico para los estudiantes de ingeniería en todas las especialidades, poniendo especial énfasis en la solución de problemas de cálculo vectorial y de cálculo integral de funciones variables.

Incorpora progra lógica de asistencia matemática para la solución de problemas, como el Derive, Microcalc y otros.

35632      **QA303 H37**  
**G.H. HARDY**  
**INEQUALITIES. Edita: Cambridge University Press. 1952. ISBN**  
**0521358804.**

This classic of the mathematical literature forms a comprehensive study of the inequalities used throughout mathematics. First published in 1934 it presents clearly and exhaustively both the statement and proof of all the standard inequalities of analysis.

The authors were well known for their powers of exposition and were able here to make the subject accessible to a wide audience of mathematicians.

35622      **QA312 H39**  
**THOMAS HAWKINGS**  
**LEBESGUE'S THEORY OF INTEGRATION.      *Its Origins and***  
***Development,* Edita: AMS Chelsea Publishing, 2002.**

This book grew out of my dual interest in the mathematics of integration theory and in the nature of its historical evolution. It is well known that modern theories of measure and integration have their roots in the work of the French mathematician Henri Lebesgue.

35616      **QA312 R36**  
**INDER K. RANA**  
**AN INTRODUCTION TO MEASURE AND INTEGRATION. Edita:**  
**Narosa Publishing House. 1997. ISBN 8173191204**

This book presents a motivated introduction to the theory of measure and integration. Starting with a historical introduction to the notion of integral and a review of the Riemann integral, the reader is motivated for the need to consider Lebesgue measure and Lebesgue integral. The abstract integration theory is developed via measure.

35705      **QA315 F69**  
**CHARLES FOX**  
**AN INTRODUCTION TO THE CALCULUS OF VARIATIONS. Edita:**  
**Dover Publications, Inc. 1987. ISBN 0486654990**

An understanding of variational methods, the source of source of such fundamental theorems as the principle of least action and its various generalizations, is essential to the study of mathematical physics and applied mathematics.

- 35696      **QA315 W44**  
**ROBERT WEINSTOCK**  
**CALCULUS OF VARIATIONS.** *With Applications to Physics and Engineering.* Edita: **Dover Publications, Inc. 1974. ISBN 0486630694**

This book by Robert Weinstock was written to fill the need for a basic introduction to the calculus of variations. Simply and easily written, with an emphasis on the applications of this calculus, it has long been a standard reference of physicists, engineers and applied mathematicians.

- 35474      **QA326 A44**  
**HERBERT ALEXANDER**  
**SEVERAL COMPLEX VARIABLES AND BANACH ALGEBRAS.** Edita: **Springer. 1998**

Many connections have found between the theory of analytic functions of one or more complex variables and the study of commutative Banach algebras. While functions theory has often been employed to answer algebraic questions such as the existence of idempotents in Banach algebra, concepts arising from the study of Banach algebras including the maximal ideal space, the Silov boundary, and Gleason parts, have led to new questions and to new methods of proofs in function theory.

- 35539      **QA329.9 A33**  
**RAVI P. AGARWAL**  
**FIXED POINT THEORY AND APPLICATIONS.** Edita: **Cambridge University Press. 2001**

Perhaps the most well known result in the theory of fixed points is Banach's contraction mapping principle. It is therefore fitting that we commence this book with a discussion of contractions and a proof of this result. In addition in Chapter 1, a local version and a generalization of existence and uniqueness of solutions of certain first order initial value problems to demonstrate the results detailed in the chapter.

- 35487      **QA331.7 F57**  
**STEPHEN D. FISHER**  
**COMPLEX VARIABLES. Edita: Dover Publications, In. 1999.**
- The most important topics in the theory and applications of complex variables receive a thorough, coherent treatment in this introductory text. Intended for undergraduates or graduate students in science, mathematics, and engineering, this volume features hundreds of solved examples, exercises, and applications designed to foster a complete understanding of complex variables as well as an appreciation of their mathematical beauty and elegance.
- 35599      **QA333 B74**  
**THOMAS BREUER**  
**CHARACTERS AND AUTOMORPHISM GROUPS OF COMPACT RIEMANN SURFACES. Edita: Cambridge University Press. 2000.**
- This book deals with automorphism groups of compact Riemann surfaces, of genus at least 2, viewed as factor groups of Fuchsian groups. The author uses modern methods from computational groups theory and representation theory, providing classifications of all automorphism groups up to genus 48. The book also classifies the ordinary characters for several groups, arising from the action of automorphisms on the space of holomorphic abelian differential of a compact Riemann surface. This book is suitable for graduate students and researchers in group theory, representation theory, complex analysis and computer algebra.
- 35708      **QA360 N44**  
**ZEEV NEHARI**  
**CONFORMAL MAPPING. Edita: Dover Publications, Inc. 1975. ISBN 048661137X**
- Conformal mapping is a field in which pure and applied mathematics are both involved. This book tries to bridge the gulf that many times divides these two disciplines by combining the theoretical and practical approaches to the subject. It will interest the pure mathematician, engineer, physics, and applied mathematician.
- 35712      **QA371 R57**  
**PAUL D. RITGER**  
**DIFFERENTIAL EQUATIONS WITH APPLICATIONS. Edita Dover Publications, Inc. 2000. ISBN 0486411545**

This coherent, balanced presentation examines the theory, applications, and techniques of differential equations. Intended for use in introductory courses, the text focuses on initial-and boundary-value problems, general properties of linear equations, and the differences between linear and nonlinear systems. Well-defined techniques include careful explanations of conditions for applicability. With emphasis on methods of general use rather than specific methods of limited use.

35556

**QA372 Z55**

**DENNIS G. ZILL**

**A FIRST COURSE IN DIFFERENTIAL EQUATIONS WITH MODELING APPLICATIONS. Edita: Brooks/Cole Publishing. 1997.**

For the Sixth Edition of A First Course in Differential Equations with Modeling Applications, the revisions reflect a dual purpose: to ensure that the information is current and relevant to students and yet maintain the rudimental foundations on which the previous editions were constructed. Written with the student in mind, this new book retains the basic level, pedagogical aids, and straight-forward style of presentation of previous editions.

35455

**QA377 E93**

**G. EVANS, J. BLACKLEDGE AND P. YARDLEY**

**ANALYTIC METHODS FOR PARTIAL DIFFERENTIAL EQUATIONS. Edita: Springer, 1999.**

The subject of partial differential equations holds an exciting place in mathematics, inevitably, the subject falls into several areas of mathematics. At one extreme the interest lies in the existence and uniqueness of solutions, and the functional analysis of the proofs of these properties. At the other extreme lies the applied mathematical and engineering quest to find useful solutions, either analytically or numerically, to these important equations which can be used in design and construction.

35699

**QA377 F37**

**STANLEY J. FARLOW**

**PARTIAL DIFFERENTIAL EQUATIONS. Edita: Dover Publications, Inc. 1993. ISBN0486676203**

Most physical phenomena, whether in the domain of fluid dynamics, electricity, magnetism, mechanics, optics or heat flow, can be described in general by partial differential equations. Indeed, such equations are crucial to mathematical

physics. Although simplifications can be made that reduce these equations to ordinary differential equations, nevertheless the complete description of physical systems resides in the general area of partial differential equations.

- 35692      **QA379 F69**  
**L. FOX, M.A., D. Sc.**  
**THE NUMERICAL SOLUTION OF TWO-POINT BOUNDARY PROBLEMS.** *In Ordinary Differential Equations.* **Edita: Dover Publications, Inc. 1990. ISBN0486664953**

Boundary-value problems arise in many areas of mathematical physics and engineering, either directly or as a step in the solution of certain partial differential equations. Before publication of this book, however, problems of this type had received little attention from authors of books on numerical methods.

- 35689      **QA401 A68**  
**RUTHERFORD ARIS**  
**MATHEMATICAL MODELLING TECHNIQUES.**    **Edita: Dover Publications, Inc. 1994. ISBN 0486681319**

Mathematical modeling is a highly useful methodology designed to enable mathematicians, physicists and other scientists to formulate equations for a given non mathematical situation. In this elegantly written volume, a distinguished theoretical chemist and engineer sets down helpful rules not only for setting up models but also for solving the mathematical problems they pose and for evaluating models.

- 35476      **QA401 A7**  
**GEORGE B. ARFKEN**  
**MATHEMATICAL METHODS FOR PHYSICISTS.**    **Edita: Harcourt Academic Press. 2001.**

Selling more than 70,000 copies through four previous editions, this best-selling title provides in one handy volume the essential mathematical tools and techniques used to solve problems in physics. An essential addition to the bookshelf of any serious student of physics or research professional in the field.

- 35561      **QA401 R55**  
**K. F. RILEY.**  
**MATHEMATICAL METHODS FOR PHYSICS AND ENGINEERING**  
*A comprehensive guide.* Edita: Cambridge University Press. ISBN  
0521555299.

All physical scientists and engineers need mathematical tools in their everyday work. This book presents the mathematics appropriate to undergraduate courses in a friendly and approachable way. The material covered is comprehensive, and takes the student from the starting level of college or university to the end of the most mathematical of science courses. It also provides a valuable reference for active researchers in physics, engineering, chemistry, applied mathematics and earth science.

- 35478      **QA402.5 L39**  
**EUGENE LAWLER**  
**COMBINATORIAL OPTIMIZATION NETWORKS AND MATROIDS.**  
**Edita: Dover Publications, Inc. 2001.**

Combinatorial optimization is a relatively recent field of inquiry deriving from combinatorial analysis—the mathematical study of the arrangement and ordering of discrete objects. Traditionally, combinatorial analysis concerned itself mostly with questions: Does a particular type of arrangement exist? And if so, how many such arrangements exist? Combinatorial optimization goes beyond those basic questions to search for the best arrangement of objects.

- 35635      **QA402.5 P37**  
**PANOS Y PAPALAMBROS**  
**PRINCIPLES OF OPTIMAL DESIGN.** *Modeling and Computation.* Edita:  
Cambridge University Press. 2000. ISBN0521627276

Principles of Optimal Design puts the concept of optimal design on rigorous foundation and demonstrates the intimate relationship the mathematical model that describes a design and the solution methods that optimize it. Since the first edition was published, computers have become ever more powerful, design engineers are tackling more complex systems, and the term "optimization" is now routinely used to denote a design process with increased seep and quality. This second edition takes account of these developments and brings the original text thoroughly up to date. The book now includes a discussion of trust region and convex approximation algorithms.

- 35601      **QA404.5 D86**  
**CHARLES F. DUNKL**  
**ORTHOGONAL POLYNOMIALS OF SEVERAL VARIABLES. Edita:**  
**Cambridge University Press. 2001.**

The study of orthogonal polynomials of several variables goes back at least as far as Hermite. There have been only a few books on the subject since: Appell and Fériet[1926] and Erdélyi et al. [1953]. Twenty-five years have gone by since Koornwinder's survey article [1975]. A number of individuals who need techniques from this topic have approached us and suggested (even asked) that we write a book accessible to a general mathematical audience.

- 35480      **QA432 D95**  
**P.P.G.DYKE**  
**AN INTRODUCTION TO LAPLACE TRANSFORMS AND FOURIER**  
**SERIES. Edita: Springer. 2001**

Emphasising the applications of Laplace transforms throughout, the book also provides coverage of the underlying pure mathematical structure. Alongside the Laplace transform, the notion of Fourier series is developed from first principles. Exercises are provided to consolidate understanding of the concepts and techniques, and only a knowledge of elementary calculus and trigonometry is assumed. For second and third year students looking for a rigorous and practical introduction to the subject, this book will be an invaluable source.

- 35688      **QA432 L36**  
**CORNELIUS LANCZOS**  
**LINEAR DIFFERENTIAL OPERATORS. Edita: Dover Publications, Inc.**  
**1997. ISBN 0486680355**

The basic and characteristic properties of linear differential operators are the focus of this graduate-level text. Unlike standard treatments of the topic, this book explores hitherto neglected issues by stressing ideas and concepts and their interrelations, rather than mere manipulation of formulae.

- 35569      **QA433 P56**  
**CLAUDIO PITA RUIZ**  
**CÁLCULO VECTORIAL. Edita: Pearson Educación. 1995.**

Este es un libro de cálculo diferencial e integral de funciones cuyo dominio y/o codominio son subconjuntos del espacio “ $\mathbb{R}$ ”. Como los elementos de este espacio se les llama “vectores”, un nombre popular para este tipo de temas dentro del cálculo es el de “cálculo vectorial”. De otro modo aún, este libro trata sobre el cálculo en (espacios de) dimensiones superiores. El único prerrequisito formal para estudiar el material que aquí se presenta, es haber tomado un curso de cálculo diferencial e integral de funciones reales de una variable real ( como el que se estudia en un primer semestre de cálculo), junto con algunos resultados elementales sobre sistemas de ecuaciones lineales y matrices (que se estudian generalmente en un curso de álgebra superior o en los primeros capítulos de un curso de álgebra lineal).

35578

**QA564 C66**

**COMPUTATIONS IN ALGEBRAIC GEOMETRY WITH MACAULAY 2. Edita: Springer. 2002. ISBN 3540422307.**

This book presents algorithmic tools for algebraic geometry and experimental applications of them. It also introduces a software system in which the tools have been implemented and with which the experiments can be carried out. *Macaulay 2* in a computer algebra system devoted to supporting research in algebraic geometry, commutative algebra, and their applications. The reader of this book will encounter Macaulay 2 in the context of concrete applications and practical computations in algebraic geometry.

35531

**QA564 E37**

**DAVID EISENBUD**

**THE GEOMETRY OF SCHEMES. Edita: Springer. 2000.**

The theory of schemes is the foundations for algebraic geometry proposed and elaborated by Alexander Grothendieck and his co-workers. It has allowed major progress in classical areas of algebraic geometry such as invariant theory and the moduli of curves. It integrates algebraic number theory with algebraic geometry, fulfilling the dreams of earlier generations of number theorists. This integration has led to proofs of some of the major conjectures in number theory (Deligne’s proof of the Weil Conjectures, Faltings’ proof of the Mordell Conjecture).

35606

**QA564 I585**

**AN INVITATION TO ALGEBRAIC GEOMETRY. Edita: Springer 2000. ISBN 0387989803.**

The aim of this book is to describe the underlying principles of algebraic geometry, some of its important developments in the twentieth century, and some of the problems that occupy its practitioners today. It is intended for the working or the aspiring mathematician who is unfamiliar with algebraic geometry but wishes to gain an appreciation of its foundations and its goals with a minimum of prerequisites. Few algebraic prerequisites are presumed beyond a basic course in linear algebra.

35524

**QA564 M86**

**DAVID MUMFORD**

**THE RED BOOK OF VARIETIES AND SCHEMES.** *Includes the Michigan Lectures (1974). On Curves and their Jacobians.* **Edita: Springer.**

This series reports on new developments in mathematical research and teaching – quickly, informally and at a high level. The type of material considered for publication includes.

- 1.- Research monographs
- 2.-Lectures on a new fields or presentations of a new angle in a classical field
- 3.-Summer schools and intensive courses on topics of current research.

35456

**QA564 M5713**

**MASAYOSHI MIYANISHI**

**ALGEBRAIC GEOMETRY.** **Edita: American Mathematical Society**

Students often say they get interested in algebraic geometry and start learning it by themselves, only to find that there are too many prerequisites: they get lost in preliminary results. The knowledge of algebra and geometry that is taught in college is not sufficient for reading through most of the serious textbooks in algebraic geometry. One needs knowledge of ring theory field theory, local rings, and transcendental field extensions, even sheaf theory and cohomologies with coefficients in sheaves, which are certainly beyond the level of college mathematics. But if one waits to begin the study of algebraic geometry until after absorbing all the necessary knowledge, then one may have lost interest.

35602

**QA612.33 M34**

**BRUCE A. MAGURN**

**ENCYCLOPEDIA OF MATHEMATICS AND ITS APPLICATIONS.** *An Algebraic Introduction to K-Theory.* **Edita: Cambridge University Press. 2002 ISBN 0521800781**

This book is intended as an introduction to algebraic K-theory that can serve as a second-semester course in algebra. A first algebra course develops the basic structures of groups, rings, and modules. But a reader of research literature in algebra soon encounters a second level of structure, such as class groups, Burnside rings, representation rings, Witt rings, and Brauer groups. These are groups, rings, or modules whose elements are themselves isomorphism classes of groups, rings, or modules.

35536

**QA614.8 H38**

**BORIS HASSELBLATT**

**A FIRST COURSE IN DYNAMICS.** *With a Panorama of Recent Developments.* **Edita: Cambridge University Press. 2003**

The theory of dynamical systems is a major mathematical discipline closely intertwined with all main areas of mathematics. It has greatly stimulated research in many sciences and given rise to the vast new area variously called applied dynamics, nonlinear science, or chaos theory. This introduction for senior under graduate and beginning graduate students of mathematics, physics, and engineering combines mathematical rigor with copious examples of important applications. It covers the central topological and probabilistic notions in dynamics ranging from Newtonian mechanics to coding theory. Readers need not be familiar with manifolds or measure theory, the only prerequisite is a basic undergraduate analysis course.

35638

**QA614.8 M43**

**ALFREDO MEDIO**

**NONLINEAR DYNAMICS** *A Primer.* **Edita: Cambridge University Press. 2001 ISBN 0521558747**

This book provides a systematic and comprehensive introduction to the study of nonlinear dynamical systems, in both discrete and continuous time, for nonmathematical students and researchers working in applied fields including economics, physics, engineering, biology, statistics and Linguistics. It includes a review of linear systems and an introduction to the classical theory of stability, as well as the usual topics of chaos and bifurcation theory. An important feature is the introduction to the measure theoretic approach to dynamical systems theory and the comparisons to the geometric or topological approach.

35552      **QA614.813 R63**  
**JAMES C. ROBINSON**  
**INFINITE-DIMENSIONAL DYNAMICAL SYSTEMS.** *An Introduction to Dissipative Parabolic PDEs and the Theory of Global Attractors.* **Edita: Cambridge University Press. 2001. ISBN 0521635640.**

This book develops the theory of global attractors for a class of parabolic PDEs that includes reaction-diffusion equations and the Navier-Stokes equations, two examples that are treated in detail. A lengthy chapter on Sobolev spaces provides the framework that allows a rigorous treatment of existence and uniqueness of solutions for both linear time-independent problems (Poisson's equation) and the nonlinear evolution equations that generate the infinite-dimensional dynamical systems of the title.

35604      **QA641 C38**  
**ISAAC CHAVEL.**  
**ISOPERIMETRIC INEQUALITIES.** *Differential Geometric and Analytic Perspectives* **Edita: Cambridge University Press. 2001..**

This book discusses two venues of the isoperimetric inequality: (i) the sharp inequality in Euclidean space, with characterization of equality, and (ii) isoperimetric inequalities in Riemannian manifolds, where precise inequalities are unavailable but rough inequalities nevertheless yield qualitative global geometric information about the manifolds.

35617      **QA641 D37**  
**R.W.R. DARLING**  
**DIFFERENTIAL FORMS AND CONNECTIONS.** **Edita: Cambridge University Press. 1994.**

This book introduces the tools of modern differential geometry—exterior calculus, manifolds, vector bundles, connections – to advanced undergraduate and beginning graduate students in mathematics, physics, and engineering. It covers both classical surface theory and the modern theory of connections and curvature, and includes a chapter on applications to theoretical physics. The only prerequisites are multivariate calculus and linear algebra, no knowledge of topology is assumed.

- 35711      **QA645 G65**  
**SAMUEL I. GOLDBERG**  
**CURVATURE AND HOMOLOGY. Edita: Dover Publications, Inc. 1998.**  
**ISBN 0486402079**
- Mathematicians interested in the curvature properties of Riemannian manifolds and their homologic structures, an increasingly important and specialized branch of differential geometry, will welcome this excellent teaching text. Revised and expanded by its well-known author, this volume offers a systematic and self-contained treatment of subjects such as the topology of differentiable manifolds, curvature and homology of Riemannian manifolds, compact Lie groups, complex manifolds, and the curvature and homology of Kaehler manifolds.
- 35412      **QA805 J66**  
**JORGE V. JOSÉ**  
**CLASSICAL DYNAMICS: A Contemporary Approach. Edita: Cambridge University Press. 2002.**
- Recent advances in the of dynamics systems have revolutionized the way that classical mechanics is taught and understood. *Classical Dynamics: Contemporary Approach* is a new and comprehensive textbook that provides a complete description of this fundamental branch of physics.
- 35551      **QA846 B3**  
**G.K. BATCHELOR, F.R.S.**  
**AN INTRODUCTION TO FLUID DYNAMICS. Edita: Cambridge University Press. 2000.**
- First published in 1967, Professor Batchelor's classic text on fluid dynamics is still on the foremost texts in the subject. The careful presentation of the underlying theories of fluids is still timely and applicable, even in these days of almost limitless computer power. This re-issue should ensure that a new generation of graduate students see the elegance of Professor Batchelor's presentation.
- 35475      **QA911 F47**  
**JOEL H. FERZIGER**  
**COMPUTATIONAL METHODS FOR FLUID DYNAMICS. Edita: Springer. 2002.**

In its 3<sup>rd</sup> revised and extended edition the book offers an overview of the techniques used to solve problems in fluid mechanics on computer and describes in detail those most often used in practice. Included are advanced methods in computational fluid dynamics, like direct and large eddy simulation of turbulence, multigrid methods, parallel computing, moving grids, structure, block structure and unstructured boundary fitted grids, free surface flows. The 3<sup>rd</sup> edition contains a new section dealing with grid quality and an extended description of discretization methods.

- 35596      **QA920 D38**  
**P. A. DAVIDSON**  
**AN INTRODUCTION TO MAGNETOHYDRODYNAMICS.**    **Edita:**  
**Cambridge University Press. 2001 ISBN 0521794870.**

Magnetic fields influence many natural and man-made flows. They are routinely used in industry to heat, pump, stir and levitate liquid metals. There is the terrestrial magnetic field which is maintained by fluid motion in the earth's core, the solar magnetic field which generates sunspots and solar flares, and the galactic field which influences the formation of stars. This is an introductory text on magnetohydrodynamics (MHD)—the study of the interaction of magnetic fields and conducting fluids.

- 35597      **QA931 N65**  
**NONLINEAR ELASTICITY: THEORY AND APPLICATIONS.**  
**Edita : Cambridge University Press. 2001 ISBN 0521796954.**

Nonlinear elasticity is concerned with nonlinear effects associated with deformations of elastic bodies subjected to external forces or temperature variations. It has important applications in, for example, the aerospace and rubber industries. It also underpins a number of the disciplines such as biomechanics, particularly in connection with the mechanical behaviour of biological tissues, e, g, arteries. This book, written by a group of leading researchers invited especially for the purpose provides an –up-to-date- and concise account of the fundamentals of the theory of nonlinear elasticity and a comprehensive review of several major current research directions in this important field.

- 35512      **QB43.2 C67**  
**MICHAEL J. CROWE**  
**MODERN THEORIES OF THE UNIVERSE.** *From Herschel to Hubble.*  
**Edita: Dover Publications, Inc., 1994.**

Simultaneously encompassing three points of view—scientific, historical and philosophical—this thought-provoking book invites the reader to relive one of the most dramatic developments in the history of thought: the evolution of stellar astronomy. It provides a solid introduction to the science of the stars beyond the solar systems, presenting the basic astronomical understanding of the universe as an expanding entity with a history spanning some fifteen billion years, and extending to billions of light-years in distance.

35515

**QB54 C67**

**MICHAEL J. CROWE**

**THE EXTRATERRESTRIAL LIFE DEBATE 1750-1900. Edita: Dover Publications, Inc. 1999. ISBN 048640675X.**

“There isn’t an uninteresting page in it. It is a masterly review of an intriguing subject, erudite and entertaining, clear and all-encompassing reading for anyone interested in one of the most wondrous and noble question sin nature—does extraterrestrial life exist?”

35514

**QB351 M68**

**FOREST RAY MOULTON**

**AN INTRODUCTION TO CELESTIAL MECHANICS. Edita: Dover Publications, Inc. 1970.**

An unrivaled text in the of celestial mechanics, Moulton’s theoretical work on the prediction and interpretation of celestial phenomena has not been superseded. By providing a general account of all parts of celestial mechanics without an over-full treatment of any single aspect, by stating all the problem in advance, and, where the transformations are long, giving an outline of the steps which must be made, and by noting all the places where assumptions have been introduced or unjustified methods employed. Moulton has insured that his work will be valuable to all who are interested in the subject.

35518

**QB461 C46**

**S. CHANDRASEKHAR**

**RADIATIVE TRANSFER. Edita: Dover Publications, Inc. 1960.**

“Radiative Transfer” is the work in the field. It provides workers and students in physics, astrophysics and atmospheric studies with the foundation for the analysis of stellar atmospheres, planetary illumination, and sky radiation. Through radiative transfer has been investigated chiefly as a phenomenon of

astrophysics, in recent years it has attracted the attention of physicists as well, since essentially the same problems arise in the theory of diffusion of neutrons.

35600

**QB695 D39**

**JOHN DAVIES**

**BEYOND PLUTO** *Exploring the outer limits of the solar systems.* **Edita: Cambridge University Press. 2001. ISBN 0521800196**

The known solar system has more than doubled in size since 1992. For the first time in almost two centuries an entirely new population of planetary objects has been found. This 'Kuiper Belt' of minor planets beyond Neptune has revolutionised our understanding of how the solar system was formed and has finally explained the origin of the enigmatic outer planet Pluto. This is the story of how theoretical physicists decided that there must be a population of unknown bodies beyond Neptune and how a small band of astronomers set out to find them.

35573

**QB981 H377S74**

**STEPHEN HAWKING**

**BREVE HISTORIA DEL TIEMPO.** **Edita Editorial Planeta 1992.**

Traducida a más de 30 idiomas y con más de cinco millones de ejemplares vendidos. Breve Historia del Tiempo se ha convertido en un fenómeno editorial mundial, y su autor Stephen Hawking, es conocido como el físico teórico más brillante después de Einstein. Editorial Planeta pone ahora a su disposición este manual imprescindible para la cabal comprensión de la obra de un hombre admirable.

35607

**QB981 K65**

**EDWARD W. KOLB**

**THE EARLY UNIVERSE.** **Edita: Westview. 1990. ISBN-0201626742.**

The Early Universe has become the standard reference on forefront topics in cosmology, especially those involving the latest ideas in particle physics as they relate to cosmology, particularly to the early history of the Universe. Subjects covered include primordial nucleosynthesis, baryogenesis, phase transitions, inflation, dark matter, and galaxy formation, relics such as axions, neutrinos, and monopoles, and speculations about the Universe at the Planck time. The book includes more than ninety figures as well as a five-page update discussing recent developments such as the COBE results.

35414      **QC3 S4513**  
**LAURIE M. BROWN**  
**SELECTED PAPERS OF RICHARD FEYNMAN: *With Commentary.***  
**Edita: World Scientific. 2000**

As its title indicates, this volume contains a selection of Feynman's important scientific papers together with short comments. Most of the papers contain pure research, but among them are scattered some articles that are largely pedagogical, such as published lectures that Feynman gave at advanced physics workshops and summers schools. As the editor I chose the papers and also provided the comments, except as indicated in the text. Such a selection cannot avoid arbitrariness, and I apologize to those who feel that their favorites may have been unjustly omitted.

35590      **QC6 A56**  
**MANUEL ALONSO SANCHEZ**  
**CONSTRUYENDO LA RELATIVIDAD.    Edita: Equipo Sirius. 2002.**  
**ISBN 8495495333.**

Uno de los motivos que justifican la publicación de esta obra parte del convencimiento de que todo conocimiento y aprendizaje científico es la respuesta a un problema previamente planteado, por lo que, los conceptos y las teorías se deberían presentar conectando con problemas que puedan servir de acicate para su desarrollo. Sin embargo, pocas presentaciones escritas acerca de aspectos de la ciencia en general o de la física en particular presentan los contenidos de este modo. En lugar de ello, los textos de física muchas veces muestran los conceptos y las teorías como unas entidades ya elaboradas.

35484      **QC21.2 H34**  
**DAVID HALLIDAY**  
**FUNDAMENTALS OF PHYSICS. *Problem Supplement # 1,* Edita: John Wiley & Sons, 2000.**

This problem supplement gives instructors who are using FUNDAMENTALS OF PHYSICS, 6/E. hundreds of fresh problems for their classes. Included in this book are:

Additional Sample Problems, some moved from the main book, plus many new to this edition. All begin with the basic Key Idea and then build step-by-step to a solution.

35584      **QC21.2 J66**  
              **EDWIN JONES**  
              **Contemporary College PHYSICS.** Edita Mc Graw-Hill, 2001

We are pleased to present the third edition of Contemporary College Physics. By building on the strengths of the first two editions of our noncalculus general physics text, we feel this edition introduces students to the beauty and usefulness of physics while teaching problem-solving skills that can help them throughout their studies and careers. With considerable help from students and instructors from across the country, we have updated and improved a wide variety of elements and introduced new features to create the third edition.

35503      **QC21.2 O43**  
              **HANS C. OHANIAN**  
              **MODERN PHYSICS.** Edita: Prentice Hall. 1995.

This book provides an introduction to modern physics, that is, the physics of the twentieth century. It is intended for science and engineering students who have become acquainted with classical mechanics and electrodynamics in the usual calculus-based introductory physics course, but who have not yet been exposed to quantum physics or relativity.

35582      **QC23 G75**  
              **W. THOMAS GRIFFITH**  
              **THE PHYSICS OF EVERYDAY PHENOMENA.**    *A conceptual*  
              *introduction to Physics.* Edita: Mc Graw-Hill, 2001.

The satisfaction of understanding how rainbows are formed, how ice skaters spin or why ocean tides roll in and out—phenomena that we all have seen or experienced—is one of the best motivators available for building scientific literacy. This book attempts to make that sense of satisfaction accessible to nonscience majors. Intended for use in a one semester or two-quarter course in conceptual physics, the book is written in a narrative style, frequently using questions designed to draw the reader into a dialogue about the ideas of physics. This inclusive style allows the book to be used by anyone interested in exploring the nature of physics and explanations of everyday physical phenomena.

35564      **QC33 S62**  
**G.L. SQUIRES**  
**PRACTICAL PHYSICS. Edita: Cambridge University Press. 2001. ISBN**  
**0521779401.**

35670      **QC173 B44**  
**ARTHUR BEISER**  
**CONCEPTS OF MODERN PHYSICS. Edita: McGraw-Hill. ISBN**  
**007115096X**

The picture on the cover shows some of the thousands of particles produced when two ultra-fast gold nuclei interact head-on in the Relativistic Heavy Ion Collider at the Brookhaven National Laboratory on Long Island, New York. This device is used to investigate the behavior of matter at extremely high densities, like those in the early universe, in particular to seek evidence for quark-gluon plasmas that may be created under such conditions.

35509      **QC173.59 S65F87**  
**STEPHEN W. HAWKING**  
**THE FUTURE OF TIME. Edita: W.W. Norton & Company. 2002**  
**ISBN 0393020223.**

Two galaxies, each with mass many billions of times that of our sun, are pulled into each other by the inescapable force of gravity. According to Einstein's view, this force is only one sign of the way galaxies curve the spacetime they live in. Another is the possibility of what spacetime scientists call a wormhole, a shortcut between the galaxies, shown here—by an artist's suggestions—as a ghostly tunnel. If such wormholes can exist, spacetime travelers could use them as part of a journey along a “closed timelike path” and return to their past.

35610      **QC174.8 W53**  
**B. WIDOM**  
**STATISTICAL MECHANICS. *A Concise Introduction for Chemists.* Edita:**  
**Cambridge University Press. 2002. ISBN 0521009669.**

The first chapter deals with statistical thermodynamics and aims to derive quickly the most commonly used formulas in the subject. The bulk of the illustrates the traditional applications of these formulas, such as the ideal gas, chemical equilibrium constants from partition functions, the ideal harmonic solid, and the statistical mechanical basis of the third law of thermodynamics.

The last few chapters deal with less traditional material such as the non-ideal gas and the quantum ideal gases.

- 35450      **QC174.12 G72**  
**WALTER GREINER**  
**QUANTUM MECHANICS. *Special Chapters.* Edita: Springer. 2001.**

Is an important additional course for third-year students. Starting with the quantization of a free electromagnetic field and its interaction with matter, it discusses second quantization and interacting quantum fields. After a sketch of renormalization problems and a general treatment of nonrelativistic quantum field theory, these physics: the quantum gas, superfluidity, plasmons, and photons.

- 35451      **QC174.12 G74**  
**WALTER GREINER**  
**QUANTUM MECHANICS. *An Introduction.* Edita : Springer, 2001.**

Quantum Mechanics (An Introduction) lays the foundation for the rest of the course on advanced quantum mechanics and field theory . Starting from Black-body radiation, the photoelectric effect and wave-particle duality. Greiner goes on to discuss the uncertainty relations, spin and many-body systems: he includes applications to the hydrogen atom and the Stern-Gerlach and Einstein –de Hass experiments. The mathematics of representation theory . S matrices perturbation theory, eigenvalue problems and hypergeometric differential equations are presented in detail, with 81 fully and carefully worked examples and exercises to consolidate the material. This fourth editions has been carefully revised and corrected.

- 35497      **QC174.12 H39**  
**STEPHEN HAWKING**  
**THE UNIVERSE IN A NUTSHELL. Edita Bantam Books.**

This landmark volume in scientific writing has become an international publishing phenomenon, translated into forty languages and selling almost ten million copies worldwide.

“Lively and provocative... Hawking clearly possesses a natural teacher’s gifts—easy, good-natured humor and an ability to illustrate highly complex propositions with analogies plucked from daily life”.

- 35722      **QC174.12 H43**  
**H.T.HECHT**  
**QUANTUM MECHANICS. Edita: Springer. 2000. ISBN0387989196**
- Intended for a first-year graduate course in quantum mechanics, this text provides a thorough introduction to the subject.
- The first half of the book emphasizes bound-state problems, It begins with the familiar approach via differential equations and coordinate representations.
- 35481      **QC174.45 L35**  
**AMITABHA LAHIRI**  
**A FIRST BOOK OF QUANTUM FIELD THEORY. Edita: Narosa Publishing House. 2001**
- This book introduces QFX for reader with no prior knowledge of the subject. It is meant to be a textbook at the advanced undergraduate or beginning postgraduate students. This book discusses quantization of fields, S-matrix theory. Feynman diagrams, calculation of decay rates and cross sections, renormalization, symmetries and symmetry breaking. Some background material on classical field theory and groups theory, needed for the exposition, are also presented in the book. Detailed calculations of weak and electromagnetic processes are included. There are many exercise problems to help the reader and the instructor.
- 35460      **QC175.2 S23**  
**ESTÉBAN SAATDJIAN**  
**TRANSPORT PHENOMENA. Edita: John Wiley & Sons, Ltds., 2000.**
- This book covers in one volume, both the theoretical development, as well as appropriate numerical solutions, for all aspects of transport phenomena. It contains a basic introduction to many aspects of fluid mechanics, heat transfer and mass transfer, and the conservation equations for mass, energy and momentum are discussed with reference to engineering applications. Heat transfer by conduction, radiation, natural and forced convection is studied, as well as mass transfer and incompressible fluid mechanics.
- 35479      **QC175.16 P5068**  
**AKIRA ONUKI**  
**PHASE TRANSITION DYNAMICS. Edita: Cambridge University Press, 2002.**

Phase transition dynamics is of central importance in current condensed matter physics. Akira Onuki provides a systematic treatment of a wide variety of topics including critical dynamics phase ordering defect dynamics, nucleation and pattern formation by constructing time- dependent Ginzburg-Landau models for various systems in physics metallurgy, and polymer science.

- 35565      **QA176.8 N35S87**  
**MICHAEL A. STROSCIO**  
**PHONONS IN NANOSTRUCTURES. Edita: Cambridge University Press.**  
**2001. ISBN 0521792790.**

This book focuses on the theory of phonon interactions in nanoscale structures with particular emphasis on modern electronic and optoelectronic devices.

- 35449      **QC311 G74**  
**WALTER GREINER**  
**THERMODYNAMICS AND STATISTICAL MECHANICS. Edita:**  
**Springer. 1995**

The series of text. Classical Theoretical Physics. Is based on the highly successful series of courses given by Walter Greiner and his colleagues at the Johann Wolfgang Goethe University Frankfurt am Main.

German. Intended for advanced undergraduates and beginning graduate students, the volumes in this series will provide not only a complete survey of classical theoretical physics but also an enormous number of worked examples and problems to show students how to apply the underlying principles to realistic problems.

- 35526      **QC311.5 G37**  
**ROBERT P H GASSER 6 W GRAHAM RICHARDS**  
**AN INTRODUCTION TO STATISTICAL THERMODYNAMICS. Edita::**  
**World Scientific. 1995.**

Statistical thermodynamics plays a vital linking role between quantum theory and chemical thermodynamics, yet students often find the subject unpalatable.

In this updated version of a popular text, the authors overcome this by emphasising the concepts involved, in particular demystifying the partition function. They do not get bogged down in the mathematical niceties that are essential for a profound study of the subject but which can confuse the beginner. Strong emphasis is placed on the physical basis of statistical thermodynamics

and the relations with experiment. After a clear exposition of the distribution laws, partition functions, heat capacities, chemical equilibria and kinetics, the subject is further illuminated by a discussion of low-temperature phenomena and spectroscopy.

- 35528      **QC318 I7S78**  
**R.F. STREATER**  
**STATISTICAL DYNAMICS.** *A stochastic Approach to Nonequilibrium Thermodynamics.* Edita: **Imperial College Press. 1995.**

This book grew out of lectures given at Virginia Tech. In 1989-1991, and continued at King's College, London. The first half is suitable as a text for a course of one semestre, being part of a programme for students of mathematics or physics pursuing a degree at the level of the M. Sc. M. Phys. Or M. Math. The second half, which is undoubtedly harder, might be used as a course-book for a more challenging course or as a source for project work at the M. Sc. level, or as a guide to research work leading to the M. Phil.

- 35566      **QC318 M3W55**  
**DAVID S. WILKINSON**  
**MASS TRANSPORT IN SOLIDS AND FLUIDS.** Edita: **Cambridge University Press. 2000.**

- 35554      **QC320 T35**  
**JEAN TAINE**  
**HEAT TRANSFER.** Edita: **Prentice Hall. 1993 ISBN 0133879941**

A thorough understanding of heat exchange within a system, or between that system and its surroundings, is essential to the efficient design of machines and thermodynamics processes. This book, HEAT TRANSFER, comprehensively explains the three divisions of such energy transfer: conduction, radiation and convection.

- 35462      **QC331 M35**  
**J. ROBERT MAHAN**  
**RADIATION HEAT TRANSFER.** *A Statistical Approach.* Edita: **John Wiley & Sons. 2002.**

Practical, Basic Coverage of radiative heat transfer.

Thermal radiation plays a critical role in our everyday lives from heating our homes and offices to controlling the temperature of the earth's atmosphere. *Radiation Heat Transfer* presents a comprehensive foundation in the basic of radiative heat transfer with focused coverage of practical applications. This versatile book is designed for a two-semester course, but can accommodate one-semester courses emphasizing either traditional methods of radiation heat transfer or a statistical formulation, specifically the Monte Carlo ray-trace (MCRT) Methods.

35469

**QC355.2 M53**

**A.A. MICHELSON**

**STUDIES IN OPTICS. Edita: Dover Publications, 1995.**

“He [Michelson] pursued his modest and serene way along the frontiers of science making new pathways and ascending to unattained heights as easily and leisurely as though he were taking an evening stroll.”

35454

**QC446.2 S38**

**MARLAN O. SCULLY**

**QUANTUM OPTICS. Edita: Cambridge University Press. 1997.**

The field of quantum optics has witnessed significant developments in recent years, from the laboratory realization of counter-intuitive concepts such a lasing without inversion and micromasers, to the investigation of fundamentals issues in quantum mechanics, such as complementary and hidden variable. This book provides an in-depth and wide-ranging introduction to the subject of quantum optics, emphasizing throughout basic principles and their applications.

35452

**QC449 K38**

**JOSEPH E. KASPER**

**THE COMPLETE BOOK OF HOLOGRAMS: *How They Work and How to Make Them*. Edita: Dover Publications. 1987.**

“I predict that Kasper and Feller will become a standard reference on holography for students and interested laymen.” James A. Van Allen.

For most nonscientists, holograms are an intriguing-if not mesmerizing-mystery. How are these seemingly magical images created and what makes them appear to be three-dimensional? This fascinating book not only offers the answers to

these and other questions about holography-it even gives step-by-step instructions so that readers can manufacture their own holograms.

- 35594      **QC679 G75**  
**WALTER GREINER**  
**QUANTUM ELECTRODYNAMICS. Edita: Springer 2003. ISBN 3540440291**

This completely revised and corrected new edition provides several new examples and exercises to enable deeper insight into the formalism and application of quantum electrodynamics. It is a thorough introductory text providing all necessary mathematical tools together with many examples and worked problems. In their presentation of the subject, the authors adopt a heuristic approach based on the propagator formalism. The latter is introduced in the first two chapters in both its nonrelativistic and its relativistic versions.

- 35589      **QC760 P76**  
**PROBLEMS AND SOLUTIONS ON ELECTROMAGNETISM. Edita: World Scientific. ISBN 9810206267.**

The material for these volumes has been selected from the past twenty years' examination questions for graduate students at the University of California at Berkeley, Columbia University, the University of Chicago, the MIT, the State University of New York at Buffalo, Princeton University and the University of Wisconsin.

- 35482      **QC776 L45**  
**J.S.LILLEY**  
**NUCLEAR PHYSICS. *Principles and Applications.* Edita: John Wiley & Sons., 2001.**

Nuclear Physics: Principles and Applications is an introduction to the basic theory and applications of modern nuclear physics. Aimed at students taking a first course in nuclear physics, the text is divided into two broad sections. The first part provides a general introduction to nuclear physics, whilst the latter half focuses on some of the most important and current applications, including nuclear medicine, instrumentation and energy from fission and fusion. Written from an experimental point of view, this text offers the reader many practical examples and problems to help encourage understanding. Although complex material treatments are avoided, derivations of formulae are given as necessary, but with a minimum mathematical complexity.

35595      **QC793.3 Q35G75**  
**WALTER GREINER**  
**QUANTUM CHROMODYNAMICS. Edita: Springer, 2002. ISBN**  
**3540666109.**

35634      **QC880 H68**  
**JOHN HOUGHTON**  
**THE PHYSICS OF ATMOSPHERES. Edita: Cambridge University Press.**  
**2002. ISBN 0521011221.**

In the third edition of *The Physics of Atmospheres*, John Houghton has revised his acclaimed textbook to bring it completely up-to-date. The first two editions received excellent reviews, and the new edition will again prove to be invaluable as a text for students of atmospheric science.

35473      **QD462.7 J64**  
**CHARLES S. JOHNSON, JR.**  
**PROBLEMS AND SOLUTIONS IN QUANTUM CHEMISTRY AND**  
**PHYSICS. Edita: Dover Publications, Inc. 1986**

Designed to aid students and teachers in advanced physical chemistry , spectroscopy or quantum chemistry courses, this carefully written books is unique in the variety of problems covered and the detail of the solutions provided.

35614      **QH212 S3F54**  
**STANLEY L. FLEGER**  
**SCANNING AND TRANSMISSION ELECTRON MICROSCOPY. *An***  
**introduction. Edita: Oxford University Press. 1993. 0195107519.**

This authoritative volume, ideal for use in any laboratory, presents the practical and theoretical fundamentals of scanning and transmission electron microscopy. Clear and concise explanations coupled with instructive diagrams and photographs guide you through microscope operation, image production, analytical techniques, and potential applications to various disciplines. Specimen preparation is discussed in detail, with emphasis on specific parameters for biological specimens.

35620      **QH212 E4H86**  
**ELAINE HUNTER**  
**PRACTICAL ELECTRON MICROSCOPY. Edita: Cambridge University Press, 1993. ISBN 0521385393.**

This is an extensively illustrated laboratory manual of transmission electron microscopy techniques for the technician, graduate student, or researcher. Chapters begin with a general discussion, move on to the chemicals and equipment required for the methods being described, and conclude with a step-by-step presentation of the method and instructions for the preparation of solutions. Notes at the end of each chapter, warn of possible pitfalls and outline “tricks of the trade”. The methods and techniques outlined have been tested for over ten years in clinical and research laboratory situations, and are entirely reliable.

35520      **T11 H37**  
**HARDY HOOVER**  
**ESSENTIALS FOR THE SCIENTIFIC AND TECHNICAL WRITER.**  
**Edita: Dover Publications, Inc. 1980 ISBN 0486240606.**

Whether you are training to be a technical writer, or are a scientist who needs to write technical papers, or an engineer or technician who must turn out reports, you should know the essentials of good scientific and technical writing. Hardy Hoover’s book on the subject is one of the best in the field.

35532      **T57.6 H55**  
**FREDERICK S. HILLIER**  
**INTRODUCTION TO OPERATIONS RESEARCH. Edita: Mc Graw-Hill, 2001.**

It is now a third of a century since the 1967 publication of the first edition of the pathbreaking introduction to Operations Research, when the field was still relatively new. A great deal has changed since then in regard to both developments in the field and evolving pedagogical demands of students. The seventh edition, in both regards, brings the book fully into the twenty-first century.

35567

**TA169 S65**

**DAVID J. SMITH**

**RELIABILITY, MAINTAINABILITY AND RISK.** *Practical methods for engineers.* Edita: **Butterworth Heinemann, 1997. ISBN 0750637528.**

Reliability, Maintainability and safety-related failures in a simple and straightforward style, explaining technical terms and jargon and pre-supposing no prior knowledge of the subject. The author explains dealing with numerical data, making realistic predictions using the minimum of mathematics, and handling the limitations of reliability parameters.

35397

**TA177.4 E54**

**E. PAUL DEGARMO**

**ENGINEERING ECONOMY.** Edita: **Prentice-Hall, 1993.**

Engineering economy – what is it and why is it important? The initial reaction of many engineering student to these questions is “money matters will be handled by someone else. It is not something I need to worry about”. Any engineering project must be not only physically realizable but also economically feasible. For example, a child’s tricycle be built with an aluminum frame or a composite frame. Some may argue that because the composite frame will be stronger and lighter, it is a better choice. However, there is not much of a market for thousand dollar tricycles. One might suggest that the above arguments is ridiculously simplistic and that common sense would dictate choosing aluminum for the framing material.

35611

**TA331 F85**

**GLENN R. FULFORD**

**INDUSTRIAL MATHEMATICS.** *Case Studies in the Diffusion of Heat and Matter.* Edita: **Cambridge University Press.**

The focus in this text is on mathematical modeling stimulated by contemporary industrial problems involving heat conduction and mass diffusion. These include continuous metal casting, laser, drilling, spontaneous combustion of industrial waste, water filtration and crop irrigation. The industrial problems prove to be an excellent setting for the introduction and reinforcement of modeling skills, equations solving techniques, qualitative understanding of partial differential equations and their dynamical properties. Mathematical topics include setting up partial differential equations and boundary conditions, dimensional analysis, scaling, perturbation expansions, boundary value problems. Fourier series, symmetry reduction, Stefan problems and bifurcations.

For students of mathematics, engineering, or any other related discipline, this will be a great introduction to modeling the real world.

- 35540      **TA340 M55**  
**RICHARD A. JOHNSON**  
**PROBABILITY AND STATISTICS FOR ENGINEERS. Edita: Prentice-Hall. 2000.**

This book has been written for an introductory course in probability and statistics for students of engineering and the physical science. Each chapter is keynoted by an introductory statement and has a checklist of key terms (with page numbers) at the end. Important formulas, theorems, and rules are set out from the text in boxes. The steps for hypothesis testing are clearly and consistently delineated in each application. Emphasis is also given to confidence interval procedures.

- 35545      **TA340 W34**  
**RONALD E. WALPOLE**  
**PROBABILITY AND STATISTICS FOR ENGINEERS AND SCIENTISTS. Edita: Prentice Hall. 1998.**

The sixth edition of Probability and Statistics for Engineers and Scientists features both statistical theory and appropriate emphasis on data analysis, statistical computation, and quality improvement. Our objective is to expose the student to elements of probability and probability distributions, statistical inference, linear regression and correlation, analysis of variance, design of experiments, and statistical quality control.

- 35633      **TA347 F5B73**  
**FINITE ELEMENTS.** *Theory, fast solvers, and applications in solid mechanics.* Edita: Cambridge University Press 2001. ISBN 0521011952.

This is a thoroughly revised version of the successful first edition. In addition to up-dating the existing text, the author has added new material that will prove useful for research or application of the finite element method. The most important application of finite elements is the numerical solution of elliptic partial differential equations. The author gives a thorough coverage of this subject and includes aspects such saddle point problems which require a more in depth mathematical treatment. This is a textbook for graduate students who do not necessarily have any particular background in differential equations, but require an introduction to finite element methods. Specifically, the chapter on

finite elements in solid mechanics. Provides a bridge between mathematics and engineering.

- 35585      **TA347 F5R33**  
**J. N. REDDY**  
**AN INTRODUCTION TO THE FINITE ELEMENT METHOD. Edita: Mc Graw-Hill. 1993.**

This second edition has the same objectives as the first, namely, an introduction to the finite element method as applied to linear, one-and two-dimensional problems of engineering and applied sciences. The revisions are mainly in the form of additional details, expansion of the topics discussed, and the addition of a few to make the coverage more complete.

- 35549      **TA357 W45**  
**FRANK M. WHITE**  
**FLUID MECHANICS. Edita: WCB McGraw-Hill. 1999.**

Fluid Mechanics, by Frank M. White, is praised for its thorough and accurate approach, student-friendly writing style, and its concise yet accessible coverage. This welcome revision has been updated to include over 500 new problems, divided into categories of Applied Problems: Word Problems. FE (fundamentals of Engineering Exam) Problems. Comprehensive Problem: and Design Projects Fluid Mechanics. Fourth Edition, has also been given an updated, modern design and now includes many useful pedagogical and motivational aids such as a removable **Key Equations Card**. Opening chapter photos, and an optional **EES (Engineering Equations Solver)** Problem disk.

- 35529      **TA403 A45**  
**SAMUEL M. ALLEN**  
**THE STRUCTURE OF MATERIALS. Edita: John Wiley & Sons, Inc. 1999.**

The modern understanding of the structure of materials began to develop significantly in the 1860s when Henry Clifton Sorby examined and interpreted microstructures of polished and etched steel samples with an optical microscope. Sorby's work led to major advances in understanding the effect of carbon content and heat treatment on the properties of steels and how to control steel production to yield desired properties.

35725     **TA404.8 D68**  
          **NORMAN E. DOWLING**  
          **MECHANICAL BEHAVIOR OF MATERIALS.** *Engineering Methods for Deformation, Fracture, and Fatigue.* Edita: **Prentice Hall. 1999. ISBN 013905720x**

Comprehensive in scope and readable, this book explores the provides the methods used by engineers to analyze and predict the mechanical behavior of materials. Author Norman E Dowling provides thorough coverage of materials testing and practical methods for forecasting the strength and life of mechanical parts and structural members.

35477     **TA409 U54**  
          **DAVID J. UNGER**  
          **ANALYTICAL FRACTURE MECHANICS.** Edita: **Dover Publications, Inc. 2001.**

One of the concerns of engineering is the failure of materials, Addressing this concern, facture mechanics—an interdisciplinary subject spanning mechanical, civil, and materials engineering, applied mathematics, and physics—predicts the conditions under which such failure will occur due to crack growth. This valuable self-contained text by an expert in the field supplements standard fracture mechanics texts by focusing on analytical methods for determining crack –tip stress and strain fields.

35464     **TA640.2 Z53**  
          **O. C. ZIENKIEWICZ, CBC. FRS, FRENG**  
          **THE FINITE ELEMENT METHOD.** Edita: **Butterworth Heinemann. 2000**

**Volume 1: The Basis.** Is The Basis is intended as a broad overview of the Finite Element Methods. Aimed at undergraduate and postgraduate students, it provides a complete introduction to the methods.

35465     **Volume 2: Solid Mechanics.** Is intended for readers studying solid and structural mechanics at a higher level. Although it is an ideal companion to volume 1.

35466     **Volume 3: Fluid Dynamics:** is intended for readers studying fluid mechanics at a higher level. Although it is an ideal companion to Volume 1: The Basis, this advanced text also function as a “stand-alone” volume, accessible to those who have been introduced to the Finite Element Method through a different route.

- 35560      **TC145 R63**  
**JOHN A. ROBERSON**  
**HYDRAULIC ENGINEERING. Edita: John Wiley & Sons, Inc. 1998.**

This text is intended for junior or senior level students who have completed a course in basic fluid mechanics. One of the primary objectives of the text is to present each subject clearly and completely enough that the student will develop a depth of understanding often lacking in more superficial presentation. To accomplish this goal in a reasonable-size text, it was necessary to be selective in the subject matter to cover. Therefore, only the common hydraulic engineering topics that civil engineers are likely to encounter in their professional careers are included; specialized topics such as sediment transport and coastal engineering are omitted. Students who wish to acquire expertise in these specialized areas should do so by taking additional elective or graduate level courses.

- 35546      **TC160 H93**  
**NED H. C. HWANG**  
**FUNDAMENTALS OF HYDRAULIC ENGINEERING SYSTEMS. Edita: Prentice-Hall. 1996.**

The successful design of hydraulic engineering systems requires an in-depth understanding of fluid mechanics coupled with programmatic consideration of design constraints. This new edition of Fundamentals of Hydraulic Engineering Systems helps the engineer bridge that gap with up-to-date, yet well-tested theory, information, and methodology.

- 35568      **TD194.68 E58**  
**11 ENVIRONMENTAL IMPACT OF POWER GENERATION. Edita: Royal Society of Chemistry. 1999. ISBN 0854042500.**

In today's automated world, the need for economic generation of power is of vital importance.

However, the industry is commonly perceived as being responsible for pollution of the atmosphere and contamination of land and water. The wide-ranging subjects addressed in this book will contribute to the public understanding of science in this important area.

- 35555      **TD194.68 G7G65**  
**GLASSON, JOHN**  
**INTRODUCTION TO ENVIRONMENTAL IMPACT ASSESSMENT. Edita: UCL Press. 1999.**

The book gives the student a good introduction to the history and evolution of environmental impact assessment. It covers the existing legislation well and

provides interesting case studies and examples along the way to keep the reader interested... Many local authorities when faced with their first EIA would welcome such a review”.

- 35562 **TD353 W37**  
**MARTIN WANIELISTA**  
**HYDROLOGY: WATER QUANTITY AND QUALITY CONTROL.**  
**Edita: John Wiley & Sons. 1197.**

Why are hydrology and water controls important? Hydrology provides a basic understanding of the occurrences and distribution of waters above, on, and below the earth. As development occurs, the quality of water may not be sufficient to provide for all intended economical uses. Thus, we must be able to control waters within their intended risk and for beneficial uses. Major disasters are caused by below normal or excessive rainfall and snowfall.

- 35467 **TJ260 C43**  
**TUNCER CEBECI**  
**CONVECTIVE HEAT TRANSFER.** **Edita: Springer. 2002.**

This book is a modern presentation of the physical and computational aspects of convective heat transfer in laminar and turbulent boundary-layer flows with small temperature differences and buoyant flows. The book also has a large number of homework problems and a CD which contains computer programs to solve external and internal flows based on differential and integral methods.

- 35642 **TK105.59 S73**  
**WILLIAM STALLINGS**  
**CRYPTOGRAPHY AND NETWORK SECURITY:** *Principles and Practice.* **Edita: Prentice Hall. 1999. ISBN 0138690175**

As we enter the age of universal electronic connectivity in which viruses hackers electronic eavesdropping, and electronic fraud can threaten the prosperity and productivity of corporations and individuals, security is increasingly important. Fortunately the discipline of cryptography and network security have matured leading to the development of practical available applications to enforce network security.

- 35530 **TK7871 L58**  
**JAMES D. LIVINGSTON**  
**ELECTRONIC PROPERTIES OF ENGINEERING MATERIALS.** **Edita: John Wiley & Sons, Inc. 1999.**

In a display in one of the halls of MIT, the field of Materials Science and Engineering is represented by a tetrahedron, with the four corners labeled PRinciples, Properties, Products, and Processes. (It was clearly the work of an expert in PR.) This text is PRImarily concerned with one edge of that tetrahedron, the connection between the basic Principles of chemistry and physics and the Properties of engineering materials—metals, semiconductors, polymers, ceramic, glasses, and composites.

35403     **TK9202 G53**  
          **SAMUEL GLASSTONE**  
          **INGENIERIA DE REACTORES NUCLEARES.** Edita: Editorial Reverté,  
          **S.A., 1990.**

El objetivo de este libro es la descripción de los principios fundamentales, científicos y tecnológicos, de los sistemas de reactores nucleares. Se dedica principal atención al proyecto de reactores y comportamiento de los mismos, en relación con el proceso de fisión y radiaciones asociadas, con preferencia a otras zonas de la ingeniería que no son exclusivas de los reactores nucleares. El libro está destinado preferentemente para servir de texto en un curso de introducción, de dos semestres, para estudiantes graduados. En consecuencia, el tratamiento seguido se adapta a las condiciones de aquellos alumnos que han completado un currículum de ingeniería a nivel medio.

35641     **TL1050 S53**  
          **MARCEL J. SIDI**  
          **SPACECRAFT DYNAMICS AND CONTROL.** *A Practical Engineering*  
          *Approach.* Edita: Cambridge University Press 1997. ISBN0521787807

Satellites are used increasingly in telecommunications, scientific research, surveillance, and meteorology, and these satellites rely heavily on the effectiveness of complex onboard control systems.

35636     **TN269.84**  
          **CHRISTOPHER L. LINER**  
          **ELEMENTS OF 3-D SEISMOLOGY.** Edita PennWell, ISBN 0878147683

Elements of 3-D Seismology is an introduction to the acquisition, processing, and interpretation of 3-d seismic data. Developed from university course notes, the text teaches the basics of 3-D seismology theory, techniques, and application. The author presents:

- 1-D and 2-D seismic concepts

- Historical and current 3-D Shooting geometries
- 3-D seismic survey pres-design techniques
- Concepts of seismic data processing, including migration and dip moveout

Concepts and limitations of 3-D seismic interpretation for structure, stratigraphy, and rock properties.

35640

**TP 156 M3H55**

**ANTHONY L. HINES**

**MASS TRANSFER. *Fundamentals and Applications* .Edita: Pearson Educación. 1985, ISBN 0135596092.**

Anthony L. Hines and Robert N. Maddox, introduce you to the fundamentals and applications of microscopic and macroscopic mass transfer.

Elements highlighting this new book:

- It combines microscopic diffusional processes and macroscopic separation methods.
- It is designed to progress from elementary to more advanced topics for both diffusional and macroscopic separation processes.
- Mathematical methods for solving partial differential equations of diffusion include the use of the Methods of Weighted Residual.
- A clear discussion of multicomponent separations include short cut and tray-by-tray methods.
- One chapter discusses both equilibrium adsorption and adsorption in packed towers, and includes methods for designing packed adsorbers.

35507

**TP359 H8H64**

**PETER HOFFMANN**

**TOMORROW'S ENERGY: *Hydrogen, Fuel Cells, and the Prospects for a Cleaner Planet.* Edita: The MIT Press Cambridge, Massachusetts. 2001**

“Chronicles the progress of hydrogen energy from a vision to a niche market in its position today on the brink of full commercialization .... After reading this book one can see the dream of a hydrogen-based economy becoming a reality”.

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**TS155 H67**

**WALLACE J. HOPP**

**FACTORY PHYSICS.** Edita: McGraw-Hill. 2001. ISBN 0071163786.

Was selected as the LLE Joint Publishers Book of the Year in 1998. This award recognizes an outstanding book that focuses on a facet of industrial engineering, proves education, or furthers the profession and presents a significant contribution to the field of knowledge.

This second edition text outlines the key underlying principles that drive the operating relationships within a factory. As the authors state in the preface, "While details will change, we are confident that the fundamental insight behind factory physics-that there are principles governing the behavior of manufacturing systems, and understanding them can improve management practice-will remain the same."

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