

## Modern Physics 2nd Edition Randy Harris Amazon Ca

Data is getting bigger and more complex by the day, and so are your choices in handling it. Explore some of the most cutting-edge databases available - from a traditional relational database to newer NoSQL approaches - and make informed decisions about challenging data storage problems. This is the only comprehensive guide to the world of NoSQL databases, with in-depth practical and conceptual introductions to seven different technologies: Redis, Neo4J, CouchDB, MongoDB, HBase, Postgres, and DynamoDB. This second edition includes a new chapter on DynamoDB and updated content for each chapter. While relational databases such as MySQL remain as relevant as ever, the alternative, NoSQL paradigm has opened up new horizons in performance and scalability and changed the way we approach data-centric problems. This book presents the essential concepts behind each database alongside hands-on examples that make each technology come alive. With each database, tackle a real-world problem that highlights the concepts and features that make it shine. Along the way, explore five database models - relational, key/value, columnar, document, and graph - from the perspective of challenges faced by real applications. Learn how MongoDB and CouchDB are strikingly different, make your applications faster with Redis and more connected with Neo4J, build a cluster of HBase servers using cloud services such as Amazon's Elastic MapReduce, and more. This new edition brings a brand new chapter on DynamoDB, updated code samples and exercises, and a more up-to-date account of each database's feature set. Whether you're a programmer building the next big thing, a data scientist seeking solutions

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to thorny problems, or a technology enthusiast venturing into new territory, you will find something to inspire you in this book. What You Need: You'll need a \*nix shell (Mac OS or Linux preferred, Windows users will need Cygwin), Java 6 (or greater), and Ruby 1.8.7 (or greater). Each chapter will list the downloads required for that database.

In the decade since the first edition of this book was published, the technologies of digital design have continued to evolve. The evolution has run along two related tracks: the underlying physical technology and the software tools that facilitate the application of new devices. The trends identified in the first edition have continued and promise to continue to do so. Programmable logic is virtually the norm for digital designers and the art of digital design now requires the software skills to deal with hardware description languages. Hardware designers now spend the majority of their time dealing with software. Specifically, the tools needed to efficiently map digital designs onto the emerging programmable devices that are growing more sophisticated. They capture their design specifications in software with language appropriate for describing the parallelism of hardware; they use software tools to simulate their designs and then to synthesize it into the implementation technology of choice. Design time is radically reduced, as market pressures require products to be introduced quickly at the right price and performance. Although the complexity of designs is necessitating ever more powerful abstractions, the fundamentals remain unchanged. The contemporary digital designer must have a much broader understanding of the discipline of computation, including both hardware and software. This broader perspective is present in this second edition.

This book is designed to bridge the gap between the descriptive course at the sophomore level and a graduate

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course in quantum mechanics in which formal operator methods are used freely.

The purpose of this book is to provide the most comprehensive, easy-to-use, and informative guide on light microscopy. Light and Video Microscopy will prepare the reader for the accurate interpretation of an image and understanding of the living cell. With the presentation of geometrical optics, it will assist the reader in understanding image formation and light movement within the microscope. It also provides an explanation of the basic modes of light microscopy and the components of modern electronic imaging systems and guides the reader in determining the physicochemical information of living and developing cells, which influence interpretation. Brings together mathematics, physics, and biology to provide a broad and deep understanding of the light microscope Clearly develops all ideas from historical and logical foundations Laboratory exercises included to assist the reader with practical applications Microscope discussions include: bright field microscope, dark field microscope, oblique illumination, phase-contrast microscope, photomicrography, fluorescence microscope, polarization microscope, interference microscope, differential interference microscope, and modulation contrast microscope

Research Methods for Community Change: A Project-Based Approach, Second Edition is an in-depth review of all of the research methods that communities can use to solve problems, develop their resources, protect their identities, and build power. With an engaging writing style and numerous real world examples, Randy Stoecker shows how to use a project-based research model in the community to: diagnose a community condition; prescribe an intervention for the condition; implement the prescription; and evaluate its impact. At every stage of this model there are research tasks, from

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needs and assets assessments to process and outcome studies. Readers also learn the importance of involving community members at every stage of the project and in every aspect of the research, making the research part of the community-building process.

In addition to featuring the latest discoveries, MODERN PHYSICS presents a contemporary and comprehensive approach to physics with a strong emphasis on applications.

The authors discuss the experiments that led to key discoveries in order to illustrate the process behind scientific advances and to give students a historical perspective. The text features a flexible organization that allows instructors to select and teach topics in a preferred sequence without compromising the student's learning experience. A sound theoretical foundation in quantum theory is included to help physics majors succeed in their upper division courses.

These popular and proven workbooks help students build confidence before attempting end-of-chapter problems. They provide short exercises that focus on developing a particular skill, mostly requiring students to draw or interpret sketches and graphs. New to the Third Edition are exercises that provide guided practice for the textbook's Problem-Solving Strategies, focusing in particular on working symbolically.

Fundamentals of Web Development covers the broad range of topics required for modern web development (both client- and server-side) and is appropriate for students who have taken a CS1 course sequence. The book guides students through the creation of enterprise-quality websites using current development frameworks, its comprehensive coverage of a modern internet development platform; includes HTML5, CSS3, Javascript, and

the LAMP stack (that is, Linux, Apache, MySQL, and PHP). Other important technologies covered include jQuery, XML, WordPress, Bootstrap, and a variety of third-party APIs that include Facebook, Twitter, and Google and Bing Maps. Coverage also includes the required ACM web development topics in a modern manner closely aligned with best practices in the real world of web development.

Teaching and Learning Experience Help students master the fundamentals of web development: A true grasp of web development requires an understanding of both the foundations of the web and current web development practices. Support learning outcomes in various teaching scenarios: This book allows instructors to chart their own unique way through the topics that make up contemporary web development. These popular and proven workbooks help students build confidence before attempting end-of-chapter problems. They provide short exercises that focus on developing a particular skill, mostly requiring students to draw or interpret sketches and graphs.

The first contemporary textbook on ordinary differential equations (ODEs) to include instructions on MATLAB, Mathematica, and Maple A Course in Ordinary Differential Equations focuses on applications and methods of analytical and numerical solutions, emphasizing approaches used in the typical engineering, physics, or mathematics student's field o

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Ideal for both physics majors & engineers, this edition provides a clear, precise, and contemporary introduction to the theory, experiment, and applications of modern physics.

A Wall Street Journal Best Book of 2013 If you ever regretted not taking physics in college--or simply want to know how to think like a physicist--this is the book for you. In this bestselling introduction, physicist Leonard Susskind and hacker-scientist George Hrabovsky offer a first course in physics and associated math for the ardent amateur.

Challenging, lucid, and concise, *The Theoretical Minimum* provides a tool kit for amateur scientists to learn physics at their own pace.

Examines the aims and tools of science for creating theories and explanations of phenomena, with an eye to answering the question of whether or not science actually leads to true comprehension of reality

R. Shankar has introduced major additions and updated key presentations in this second edition of *Principles of Quantum Mechanics*. New features of this innovative text include an entirely rewritten mathematical introduction, a discussion of Time-reversal invariance, and extensive coverage of a variety of path integrals and their applications. Additional highlights include: - Clear, accessible treatment of underlying mathematics - A review of Newtonian, Lagrangian, and Hamiltonian mechanics

- Student understanding of quantum theory is enhanced by separate treatment of mathematical theorems and physical postulates - Unsurpassed coverage of path integrals and their relevance in contemporary physics The requisite text for advanced undergraduate- and graduate-level students, Principles of Quantum Mechanics, Second Edition is fully referenced and is supported by many exercises and solutions. The book's self-contained chapters also make it suitable for independent study as well as for courses in applied disciplines.

Following on from the ground-breaking first edition, which received the 2014 EDRA Achievement Award, this fully updated text includes new chapters on current issues in the built environment, such as GIS and mapping, climate change, and qualitative approaches. Place attachments are powerful emotional bonds that form between people and their physical surroundings. They inform our sense of identity, create meaning in our lives, facilitate community, and influence action. Place attachments have bearing on such diverse issues as rootedness and belonging, placemaking and displacement, mobility and migration, intergroup conflict, civic engagement, social housing and urban redevelopment, natural resource management, and global climate change. In this multidisciplinary book, Manzo and Devine-Wright draw together the latest thinking by leading scholars from around the globe,

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including contributions from scholars such as Daniel Williams, Mindy Fullilove, Randy Hester, and David Seamon, to capture significant advancements in three main areas: theory, methods, and applications. Over the course of fifteen chapters, using a wide range of conceptual and applied methods, the authors critically review and challenge contemporary knowledge, identify significant advances, and point to areas for future research. This important volume offers the most current understandings about place attachment, a critical concept for the environmental social sciences and placemaking professions.

Thoroughly revised, this third edition focuses on modern techniques used to generate synthetic three-dimensional images in a fraction of a second. With the advent of programmable shaders, a wide variety of new algorithms have arisen and evolved over the past few years. This edition discusses current, practical rendering methods used in games and other applications. It also presents a solid theoretical framework and relevant mathematics for the field of interactive computer graphics, all in an approachable style. The authors have made the figures used in the book available for download for fair use.:Download Figures. Reviews Rendering has been a required reference for professional graphics practitioners for nearly a decade. This latest edition is as relevant as ever, covering topics from essential mathematical foundations to advanced techniques used by

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today's cutting edge games. -- Gabe Newell, President, Valve, May 2008 Rendering ... has been completely revised and revamped for its updated third edition, which focuses on modern techniques used to generate three-dimensional images in a fraction of the time old processes took. From practical rendering for games to math and details for better interactive applications, it's not to be missed. -- The Bookwatch, November 2008 You'll get brilliantly lucid explanations of concepts like vertex morphing and variance shadow mapping—as well as a new respect for the incredible craftsmanship that goes into today's PC games. -- Logan Decker, PC Gamer Magazine , February 2009

This textbook for a calculus-based physics course for non-physics majors includes end-of-chapter summaries, key concepts, real-world applications, and problems.

Keeping the mathematics to a minimum yet losing none of the required rigor, Understanding Solid State Physics, Second Edition clearly explains basic physics principles to provide a firm grounding in the subject. This new edition has been fully updated throughout, with recent developments and literature in the field, including graphene and the use of quasicrystalline materials, in addition to featuring new journalistic boxes and the reciprocal lattice. The author underscores the technological applications of the physics discussed and emphasizes the

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multidisciplinary nature of scientific research. After introducing students to solid state physics, the text examines the various ways in which atoms bond together to form crystalline and amorphous solids. It also describes the measurement of mechanical properties and the means by which the mechanical properties of solids can be altered or supplemented for particular applications. The author discusses how electromagnetic radiation interacts with the periodic array of atoms that make up a crystal and how solids react to heat on both atomic and macroscopic scales. She then focuses on conductors, insulators, semiconductors, and superconductors, including some basic semiconductor devices. The final chapter addresses the magnetic properties of solids as well as applications of magnets and magnetism. This accessible textbook provides a useful introduction to solid state physics for undergraduates who feel daunted by a highly mathematical approach. By relating the theories and concepts to practical applications, it shows how physics is used in the real world. Key features: Fully updated throughout, with new journalistic boxes and recent applications Uses an accessible writing style and format, offering journalistic accounts of interesting research, worked examples, self-test questions, and a helpful glossary of frequently used terms Highlights various technological applications of physics, from locomotive lights to medical scanners to USB flash

drives

The student solutions manual contains detailed solutions to approximately 25% of the end-of-chapter problems. Important Notice: Media content referenced within the product description or the product text may not be available in the ebook version.

**NAMED ONE OF THE BEST BOOKS OF THE YEAR BY KIRKUS REVIEWS** In a memoir of family bonding and cutting-edge physics for readers of Brian Greene's *The Hidden Reality* and Jim Holt's *Why Does the World Exist?*, Amanda Gefter tells the story of how she conned her way into a career as a science journalist—and wound up hanging out, talking shop, and butting heads with the world's most brilliant minds. At a Chinese restaurant outside of Philadelphia, a father asks his fifteen-year-old daughter a deceptively simple question: "How would you define nothing?" With that, the girl who once tried to fail geometry as a conscientious objector starts reading up on general relativity and quantum mechanics, as she and her dad embark on a life-altering quest for the answers to the universe's greatest mysteries. Before Amanda Gefter became an accomplished science writer, she was a twenty-one-year-old magazine assistant willing to sneak her and her father, Warren, into a conference devoted to their physics hero, John Wheeler. Posing as journalists, Amanda and Warren met Wheeler, who

offered them cryptic clues to the nature of reality: The universe is a self-excited circuit, he said. And, The boundary of a boundary is zero. Baffled, Amanda and Warren vowed to decode the phrases—and with them, the enigmas of existence. When we solve all that, they agreed, we'll write a book. Trespassing on Einstein's Lawn is that book, a memoir of the impassioned hunt that takes Amanda and her father from New York to London to Los Alamos. Along the way, they bump up against quirky science and even quirker personalities, including Leonard Susskind, the former Bronx plumber who invented string theory; Ed Witten, the soft-spoken genius who coined the enigmatic M-theory; even Stephen Hawking. What they discover is extraordinary: the beginnings of a monumental paradigm shift in cosmology, from a single universe we all share to a splintered reality in which each observer has her own. Reality, the Gefters learn, is radically observer-dependent, far beyond anything of which Einstein or the founders of quantum mechanics ever dreamed—with shattering consequences for our understanding of the universe's origin. And somehow it all ties back to that conversation, to that Chinese restaurant, and to the true meaning of nothing. Throughout their journey, Amanda struggles to make sense of her own life—as her journalism career transforms from illusion to reality, as she searches for her voice as a

writer, as she steps from a universe shared with her father to at last carve out one of her own. It's a paradigm shift you might call growing up. By turns hilarious, moving, irreverent, and profound, *Trespassing on Einstein's Lawn* weaves together story and science in remarkable ways. By the end, you will never look at the universe the same way again. Praise for *Trespassing on Einstein's Lawn* "Nothing quite prepared me for this book. Wow. Reading it, I alternated between depression—how could the rest of us science writers ever match this?—and exhilaration."—*Scientific American* "To Do: Read *Trespassing on Einstein's Lawn*. Reality doesn't have to bite."—*New York* "A zany superposition of genres . . . It's at once a coming-of-age chronicle and a father-daughter road trip to the far reaches of this universe and 10,500 others."—*The Philadelphia Inquirer*

This comprehensive book provides the most complete coverage of general relativity and cosmology—with detailed discussions on the historical origins of topics. Its presentation is consistently linked to observation, and to the physical numbers as well, so that readers develop a sense of the magnitudes involved in the material being covered. Chapter topics include waves as particles and particles as waves; atoms and the Bohr Model; The Schrödinger Equation; barriers and wells; statistical physics; conductors, insulators, and

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superconductors; and elementary particle physics. A reference for today's scientists.

Modern Physics, Second Edition provides a clear, precise, and contemporary introduction to the theory, experiment, and applications of modern physics. Ideal for both physics majors and engineers, this eagerly awaited second edition puts the modern back into modern physics courses. Pedagogical features throughout the text focus the reader on the core concepts and theories while offering optional, more advanced sections, examples, and cutting-edge applications to suit a variety of students and courses. Critically acclaimed for his lucid style, in the second edition, Randy Harris applies the same insights into recent developments in physics, engineering, and technology.

Adopting a flexible and contemporary approach, and examining the most relevant and newest topics, this physics text is enhanced by the optional self-contained sections and exercises. It also includes special progress and application sections.

'This is about gob-smacking science at the far end of reason ... Take it nice and easy and savour the experience of your mind being blown without recourse to hallucinogens' Nicholas Lezard, Guardian For most people, quantum theory is a byword for mysterious, impenetrable science. And yet for many years it was equally baffling for scientists themselves. In this magisterial book, Manjit

Kumar gives a dramatic and superbly-written history of this fundamental scientific revolution, and the divisive debate at its core. Quantum theory looks at the very building blocks of our world, the particles and processes without which it could not exist. Yet for 60 years most physicists believed that quantum theory denied the very existence of reality itself. In this tour de force of science history, Manjit Kumar shows how the golden age of physics ignited the greatest intellectual debate of the twentieth century. Quantum theory is weird. In 1905, Albert Einstein suggested that light was a particle, not a wave, defying a century of experiments. Werner Heisenberg's uncertainty principle and Erwin Schrodinger's famous dead-and-alive cat are similarly strange. As Niels Bohr said, if you weren't shocked by quantum theory, you didn't really understand it. While "Quantum" sets the science in the context of the great upheavals of the modern age, Kumar's centrepiece is the conflict between Einstein and Bohr over the nature of reality and the soul of science. 'Bohr brainwashed a whole generation of physicists into believing that the problem had been solved', lamented the Nobel Prize-winning physicist Murray Gell-Mann. But in "Quantum", Kumar brings Einstein back to the centre of the quantum debate. "Quantum" is the essential read for anyone fascinated by this complex and thrilling story and by the band of brilliant men at its

heart.

Plant Cell Biology, Second Edition: From Astronomy to Zoology connects the fundamentals of plant anatomy, plant physiology, plant growth and development, plant taxonomy, plant biochemistry, plant molecular biology, and plant cell biology. It covers all aspects of plant cell biology without emphasizing any one plant, organelle, molecule, or technique. Although most examples are biased towards plants, basic similarities between all living eukaryotic cells (animal and plant) are recognized and used to best illustrate cell processes. This is a must-have reference for scientists with a background in plant anatomy, plant physiology, plant growth and development, plant taxonomy, and more. Includes chapter on using mutants and genetic approaches to plant cell biology research and a chapter on -omic technologies Explains the physiological underpinnings of biological processes to bring original insights relating to plants Includes examples throughout from physics, chemistry, geology, and biology to bring understanding on plant cell development, growth, chemistry and diseases Provides the essential tools for students to be able to evaluate and assess the mechanisms involved in cell growth, chromosome motion, membrane trafficking and energy exchange

Very Short Introductions: Brilliant, Sharp, Inspiring  
Philosophy of physics is concerned with the deepest

theories of modern physics - notably quantum theory, our theories of space, time and symmetry, and thermal physics - and their strange, even bizarre conceptual implications. A deeper understanding of these theories helps both physics, through pointing the way to new theories and new applications, and philosophy, through seeing how our worldview has to change in the light of what we learn from physics. This Very Short Introduction explores the core topics in philosophy of physics through three key themes. The first - the nature of space, time, and motion - begins by considering the philosophical puzzles that led Isaac Newton to propose the existence of absolute space, and then discusses how those puzzles change - but do not disappear - in the context of the revolutions in our understanding of space and time that came first from special, and then from general, relativity. The second - the emergence of irreversible behavior in statistical mechanics - considers how the microscopic laws of physics, which know of no distinction between past and future, can be compatible with the melting of ice, the cooling of coffee, the passing of youth, and all the other ways in which the large-scale world distinguishes past from future. The last section discusses quantum theory - the foundation of most of modern physics, yet mysterious to this day. It explains just why quantum theory is so difficult to make sense of, how we might nonetheless attempt

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to do it, and why the question has been highly relevant to the development of physics, and continues to be so. ABOUT THE SERIES: The Very Short Introductions series from Oxford University Press contains hundreds of titles in almost every subject area. These pocket-sized books are the perfect way to get ahead in a new subject quickly. Our expert authors combine facts, analysis, perspective, new ideas, and enthusiasm to make interesting and challenging topics highly readable. Modern Physics, Second Edition provides a clear, precise, and contemporary introduction to the theory, experiment, and applications of modern physics. This eagerly awaited second edition puts the modern back into modern physics courses. Pedagogical features throughout the text focus the reader on the core concepts and theories while offering optional, more advanced sections, examples, and cutting-edge applications to suit a variety of courses. Critically acclaimed for his lucid style, in the second edition, Randy Harris applies the same insights into recent developments in physics, engineering, and technology. Physics at the Turn of the 20th Century, Special Relativity, Waves and Particles I: Electromagnetic Radiation Behaving as Particles, Waves and Particles II: Matter Behaving as Waves, Bound States: Simple Cases, Unbound States: Obstacles, Tunneling and Particle-Wave Propagation, Quantum Mechanics in Three

Dimensions and The Hydrogen Atom, Spin and Atomic Physics, Statistical Mechanics, Bonding: Molecules and Solids, Nuclear Physics, Fundamental Particles and Interactions. For all readers interested in modern physics.

The parameters within which young people live their lives have changed radically. Changes in education and the labour market have led to an increased complexity of the youth phase and to an overall protraction in dependency and transitions. Written by leading academics from several countries, this Handbook introduces up to date perspectives on a wide range of issues that affect and shape youth and young adulthood. It provides an authoritative and multi-disciplinary overview of a field of study that offers unique insight on social change in advanced societies and is aimed at academics, students, researchers and policy-makers. The Handbook introduces some of the key theoretical perspectives used within youth studies and sets out future research agendas. Each of the ten sections covers an important area of research – from education and the labour market to youth cultures, health and crime whilst discussing change and continuity in the lives of young people. This work introduces readers to some of the most important work in the field while highlighting the underlying perspectives that have been used to understand the complexity of modern youth and young adulthood.

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An engaging writing style and a strong focus on the physics make this graduate-level textbook a must-have for electromagnetism students.

One of the field's most respected introductory texts, *Modern Physics* provides a deep exploration of fundamental theory and experimentation. Appropriate for second-year undergraduate science and engineering students, this esteemed text presents a comprehensive introduction to the concepts and methods that form the basis of modern physics, including examinations of relativity, quantum physics, statistical physics, nuclear physics, high energy physics, astrophysics, and cosmology. A balanced pedagogical approach examines major concepts first from a historical perspective, then through a modern lens using relevant experimental evidence and discussion of recent developments in the field. The emphasis on the interrelationship of principles and methods provides continuity, creating an accessible "storyline" for students to follow. Extensive pedagogical tools aid in comprehension, encouraging students to think critically and strengthen their ability to apply conceptual knowledge to practical applications. Numerous exercises and worked examples reinforce fundamental principles.

Long before Galileo published his discoveries about Jupiter, lunar craters, and the Milky Way in the *Starry Messenger* in 1610, people were fascinated with the planets and stars around them. That interest continues today, and scientists are making new discoveries at an astounding rate. Ancient lake beds on Mars, robotic spacecraft missions, and new definitions of planets now

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dominate the news. How can you take it all in? Start with the new Encyclopedia of the Solar System, Second Edition. This self-contained reference follows the trail blazed by the bestselling first edition. It provides a framework for understanding the origin and evolution of the solar system, historical discoveries, and details about planetary bodies and how they interact—and has jumped light years ahead in terms of new information and visual impact. Offering more than 50% new material, the Encyclopedia includes the latest explorations and observations, hundreds of new color digital images and illustrations, and more than 1,000 pages. It stands alone as the definitive work in this field, and will serve as a modern messenger of scientific discovery and provide a look into the future of our solar system. · Forty-seven chapters from 75+ eminent authors review fundamental topics as well as new models, theories, and discussions · Each entry is detailed and scientifically rigorous, yet accessible to undergraduate students and amateur astronomers · More than 700 full-color digital images and diagrams from current space missions and observatories amplify the chapters · Thematic chapters provide up-to-date coverage, including a discussion on the new International Astronomical Union (IAU) vote on the definition of a planet · Information is easily accessible with numerous cross-references and a full glossary and index

Modern Physics, 2nd edition is the revision of a modern classic that covers all the major topics in modern physics, including relativity, quantum physics, and their applications.· The Special Theory of Relativity· The

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Particlelike Properties of Electromagnetic Radiation· The Wavelike Properties of Particles· The Schrödinger Equation· The Rutherford-Bohr Model of the Atom· The Hydrogen Atom in Wave Mechanics· Many-Electron Atoms· Molecular Structure· Statistical Physics· Solid-State Physics· Nuclear Structure and Radioactivity· Nuclear Reactions and Applications· Elementary Particles· Astrophysics and General Relativity· Cosmology: The Origin and Fate of the Universe

Incorporating dramatic recent advances, "Methods in Modern Biophysics" presents a fresh and timely introduction to modern biophysical methods. This innovative text surveys and explains the ten key biophysical methods, including those related to biophysical nanotechnology, scanning probe microscopy, X-ray crystallography, ion mobility spectrometry, mass spectrometry, and proteomics. Containing much information previously unavailable in tutorial form, "Methods in Modern Biophysics" employs worked examples and more than 260 illustrations to fully detail the techniques and their underlying mechanisms. The book was written for advanced undergraduate and graduate students, postdocs, researchers, lecturers and professors in biophysics, biochemistry, general biology and related fields.

Physics contains 31 chapters, grouped into nine units. To accommodate varying needs and tastes, there is more material than can usually be covered in a two-semester or three-quarter course.

Accessible and flexible, MODERN PHYSICS, Third Edition has been specifically designed to provide simple,

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clear, and mathematically uncomplicated explanations of physical concepts and theories of modern physics. The authors clarify and show support for these theories through a broad range of current applications and examples-attempting to answer questions such as: What holds molecules together? How do electrons tunnel through barriers? How do electrons move through solids? How can currents persist indefinitely in superconductors? To pique student interest, brief sketches of the historical development of twentieth-century physics such as anecdotes and quotations from key figures as well as interesting photographs of noted scientists and original apparatus are integrated throughout. The Third Edition has been extensively revised to clarify difficult concepts and thoroughly updated to include rapidly developing technical applications in quantum physics. To complement the analytical solutions in the text and to help students visualize abstract concepts, the new edition also features free online access to QMTools, new platform-independent simulation software created by co-author, Curt Moyer, and developed with support from the National Science Foundation. Icons in the text indicate the problems designed for use with the software. Important Notice: Media content referenced within the product description or the product text may not be available in the ebook version.

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