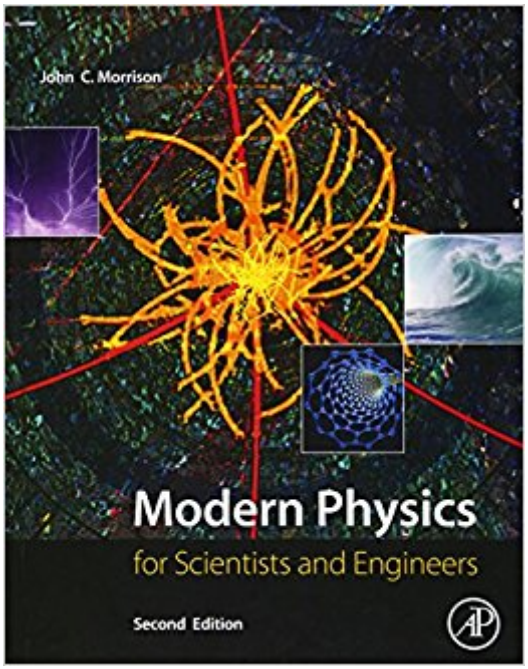
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Modern Physics, Second Edition: For Scientists And Engineers



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Synopsis

The second edition of Modern Physics for Scientists and Engineers is intended for a first course in modern physics. Beginning with a brief and focused account of the historical events leading to the formulation of modern quantum theory, later chapters delve into the underlying physics. Streamlined content, chapters on semiconductors, Dirac equation and quantum field theory, as well as a robust pedagogy and ancillary package, including an accompanying website with computer applets, assist students in learning the essential material. The applets provide a realistic description of the energy levels and wave functions of electrons in atoms and crystals. The Hartree-Fock and ABINIT applets are valuable tools for studying the properties of atoms and semiconductors.Develops modern quantum mechanical ideas systematically and uses these ideas consistently throughout the bookCarefully considers fundamental subjects such as transition probabilities, crystal structure, reciprocal lattices, and Bloch theorem which are fundamental to any treatment of lasers and semiconductor devicesClarifies each important concept through the use of a simple example and often an illustrationFeatures expanded exercises and problems at the end of each chapter Offers multiple appendices to provide quick-reference for students

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Customer Reviews

John Morrison received a BS degree in Physics from University of Santa Clara in California. During his undergraduate years, he majored in English, Philosophy, and Physics and served as the editor of the campus literary magazine, the Owl. Enrolling at Johns Hopkins University in Baltimore, Maryland, he received a PhD degree in theoretical Physics and moved on to postdoctoral research

at Argonne National Laboratory where he was a member of the Heavy Atom Group. He then went to Sweden where he received a grant from the Swedish Research Council to build up a research group in theoretical atomic physics at Chalmers Technical University in Goteborg, Sweden. Working together with Ingvar Lindgren, he taught a graduate level-course in theoretical atomic physics for a number of years. Their teaching lead to the publication of the monograph, Atomic Many-Body Theory, which first appeared as Volume 13 of the Springer Series on Chemical Physics. The second edition of this book has become a Springer classic. Returning to the United States, John Morrison obtained a position in the Department of Physics and Astronomy at University of Louisville where he has taught courses in elementary physics, astronomy, modern physics, and quantum mechanics. In recent years, he has traveled extensively in Latin America and the Middle East maintaining contacts with scientists and mathematicians at the Hebrew University in Jerusalem and the Technion University in Haifa. During the Fall semester of 2009, he taught a course on computational physics at Birzeit University near Ramallah on the West Bank, and he has recruited Palestinian students for the graduate program in physics at University of Louisville. He speaks English, Swedish, and Spanish, and he is currently studying Arabic and Hebrew.

I’m in a college modern physics course that allows students their choice of textbook. This treatment of modern physics has been very helpful to me, and many other students prefer my textbook to others because of the way each chapter is organized (includes a detailed and concise summary of each chapter’s key equations and concepts at the end) and because of the more practical, real-world applications the book discusses as examples (most of the people I study with are engineering majors, not physics or mathematics, and prefer to see engineering applications).

If you want to learn more about modern and/or quantum physics, this book is great for self-instruction. It may be helpful to brush up a little on differential equations first. The author uses a wave mechanics approach. The introduction and first three chapters were very clear and easy to read. They develop the ShrÃƒÂ¶dinger equation and its application. Chapter 4 covered the hydrogen atom. I then skipped ahead to read chapter 11 on relativity. For a self-study of quantum physics using a matrix mechanics approach, check out Quantum Mechanics Demystified

This is one of the few physics books that I’ve seen that is able to write everything in everyday English, yet at the same time, enhance understanding of the material. Many of the chapters are independent of one another, so it allows flexibility within the class. While there are certainly more

advanced and mathematically intense topics that are not included in the text, this book is a good way to introduce yourself to Modern Physics, and other books can be used to fill in the gaps later once you understand the most important ideas and concepts.

Great book! Exactly what I was looking for!

like it

Seems like a good book.

This is a great text book. It reads well and is through. Lots of graphs and through explanation. Arrived in great condition.

The book is alright. The derivations are relatively easy to understand, but the concepts are poorly described. You must have a strong math background to understand this book, differential, integral, and differential equations are a must know.

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