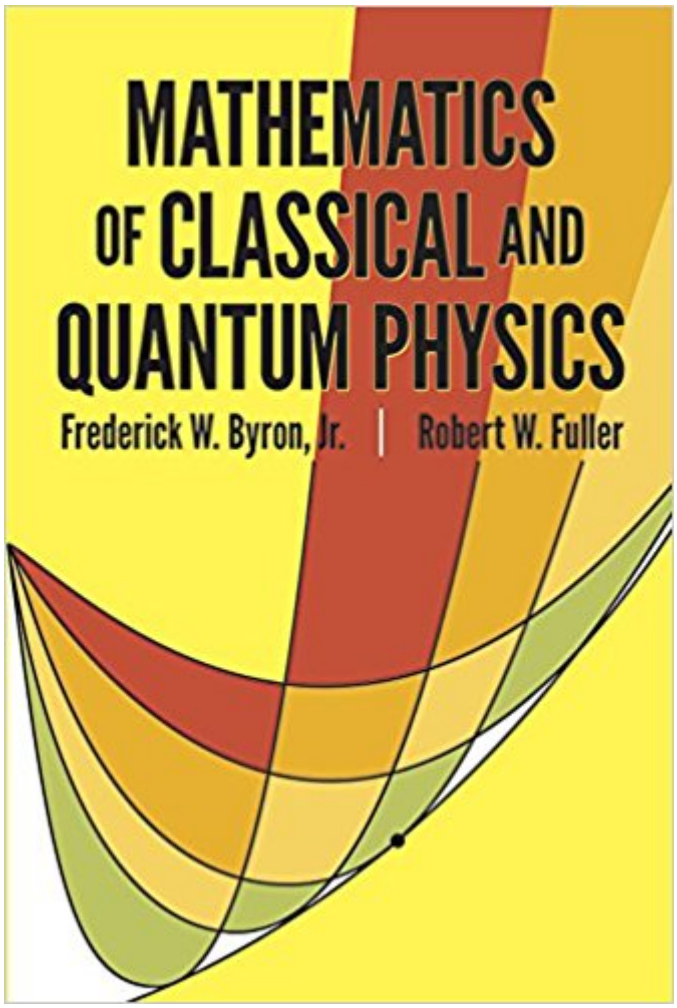
Mathematics Of Classical And Quantum Physics (Dover Books On Physics)



Synopsis

This textbook is designed to complement graduate-level physics texts in classical mechanics, electricity, magnetism, and quantum mechanics. Organized around the central concept of a vector space, the book includes numerous physical applications in the body of the text as well as many problems of a physical nature. It is also one of the purposes of this book to introduce the physicist to the language and style of mathematics as well as the content of those particular subjects with contemporary relevance in physics.Chapters 1 and 2 are devoted to the mathematics of classical physics. Chapters 3, 4 and 5 â " the backbone of the book â " cover the theory of vector spaces. Chapter 6 covers analytic function theory. In chapters 7, 8, and 9 the authors take up several important techniques of theoretical physics â " the Green's function method of solving differential and partial differential equations, and the theory of integral equations. Chapter 10 introduces the theory of groups. The authors have included a large selection of problems at the end of each chapter, some illustrating or extending mathematical points, others stressing physical application of techniques developed in the text.Essentially self-contained, the book assumes only the standard undergraduate preparation in physics and mathematics, i.e. intermediate mechanics, electricity and magnetism, introductory quantum mechanics, advanced calculus and differential equations. The text may be easily adapted for a one-semester course at the graduate or advanced undergraduate level.

Book Information

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Customer Reviews

This book gives an excellent coverage of mathematical physics from the standpoint of a vector space. It takes all of the mathematics that would normally be spread out over many courses and brings it together in one book. The treatment given here is concise and complete. It is well written and easy to follow unlike some texts.As other reviewers have said, this book is for advanced students. People with a strong mathematical background should gain a lot from this book. Undergraduates would probably find most of this book too hard. However, because this book is so good, undergraduates with an interest in mathematical physics could also gain a lot from this book.Coming from Dover this book is not only very good, it is very cheap, which makes it extremely good value. I highly recommend it.

Byron and Fuller is a must have for anyone studying mathematical physics. It’s presentation is thorough and complete as an introductory book for this massive field.

If you are a graduate student in the field of physics, this book is a MUST HAVE. Inevitably as an undergraduate you will be ill-prepared for what you are expected to know as a graduate student in physics. This book as thoroughly filled in the mathematical gaps that I was missing. This book was used as a text for my Methods of Theoretical Physics class and I can say that it is clearly leads you through every topic without much confusion. I will be using this text as a reference for years to come.

If you are like so me, you have spent years torturing yourself with horrific books like Matthews and Walker or Arfken. But almost by accident I came across this absolute gem, this masterpiece of balance between rigor and informality. The book presents mathematical physics on a level that is exactly at the level of graduate physics. The notation, the viewpoint and the emphasis are exactly what you need to master just about all the mathematics in graduate physics. This is all done not as Afken or Matthews and Walker do it, by slapping together hodgepodges of this and that into a cookbook, but by unifying mathematical physics into a beautiful tapestry, with the underlying fabric of linear vector spaces.This book would be worth it if the price were 10 times more than it is.

As a physicist, this is an excellent book encompassing all the mathematics used in the field.

This book contains an enormous amount of insight into a great amount of mathematics that is largely taken for granted in undergraduate courses on the subjects of Classical and Quantum

Physics. This book, despite it's age, does a wonderful job of filling the gaps between undergraduate math courses in Linear Algebra and Calculus, and the mathematics that is used in these two foundational fields of physics. I highly recommend this book for any aspiring graduate student in physics, particularly after one has taken a good number of math courses and both classical and quantum physics at the undergraduate level, in preparation for graduate studies. In particular, it is best for someone who is interested in the details of the thoeries. It helped me a lot.

This should be mandatory reading for any students embarking on the study of quantum mechanics as the mathematical backbone required is a little stouter than is typically provided to a junior level undergrad student.

If you're tired of reading descriptive physics like Paul Davies' books and want to be able to read the original papers and follow the math, this is the book. It presumes a strong undergraduate math background in some areas but the explanations are clear and the proofs are easy to follow. If you want to read quantum physics, the chapters on vectors and operators will give you the math foundations.

BOOKS, HENNESSY BOOKS, QUAID HORSES, DOUCET BOOKS, DEER LAKE BOOKS, ELENA ESTES BOOKS, OAK KNOLL BOOKS BY TAMI HOAG Classical Field Theory (Dover Books on Physics) Classical Mechanics: 2nd Edition (Dover Books on Physics) Mathematics and the Imagination (Dover Books on Mathematics) The Nature and Power of Mathematics (Dover Books on Mathematics) Mathematics and the Physical World (Dover Books on Mathematics) Undecidable Theories: Studies in Logic and the Foundation of Mathematics (Dover Books on Mathematics) The Physics and Philosophy of the Bible: How Relativity, Quantum Physics, Plato, and History Meld with Biblical Theology to Show That God Exists and That ... Live Forever (The Inevitable Truth Book 1)