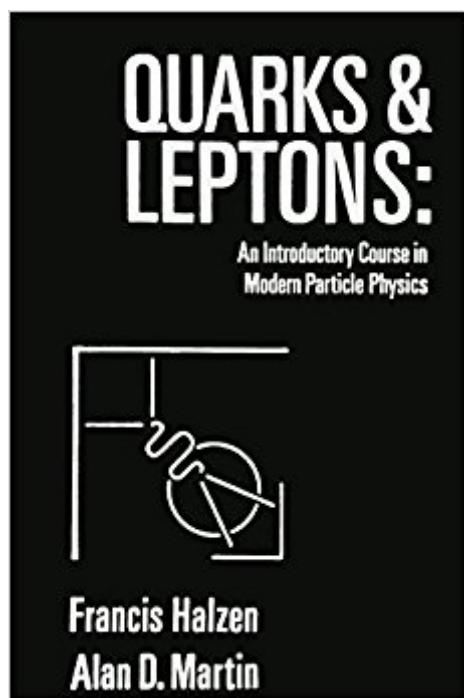


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# Quarks And Leptons: An Introductory Course In Modern Particle Physics



## **Synopsis**

This self-contained text describes breakthroughs in our understanding of the structure and interactions of elementary particles. It provides students of theoretical or experimental physics with the background material to grasp the significance of these developments.

## **Book Information**

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## **Customer Reviews**

This self-contained text describes breakthroughs in our understanding of the structure and interactions of elementary particles. It provides students of theoretical or experimental physics with the background material to grasp the significance of these developments.

Got a second copy !

I used this book for an independent study in particle physics and found it clear and concise.my background: Quantum 1 and was currently taking Quantum 2

Best Particle Physics book hands down

An extremely useful book (once I did a semester of Field Theory).

I liked the concise approach, covering most essential aspects of modern particle physics. The problems were at the right level for an introductory text.

This textbook is the pits. It's unorganized, and terse in the presentation of the subject matter. A lot of the subject matter being presented is in terms of exercises that the student must do to gain understanding and progress to future chapters of the book. Also, the hints that are provided to help with the exercises many times aren't helpful at all. Although it has introductory in its title, it assumes prior knowledge of the subject being presented. For a far better, although slightly less advanced textbook, refer to Griffith's "Introduction to Elementary Particles". What's way more disheartening than this is that there is a lack of good Particle Physics textbooks out there. This book definitely doesn't help the cause.

I think this textbook is acceptable, but Griffiths' particle physics book (2nd edition) is much nicer. I personally have low tolerance for physicists who cannot communicate well, so I am truly in love with Griffiths (the book, but I'm sure the man isn't too bad). Unlike Halzen and Martin...-Griffiths spends more time and paper using clear English making it an enjoyable read, which is especially helpful for the beginner.-Griffiths also has many very nice tables, figures, and explicitly written equations that are great for reference. Halzen and Martin sometimes requires having other reference materials (such as Griffiths) available to solve the problems.-Lastly, Griffiths does not waste your time with handwaving pseudo QFT and simply states that certain things can be derived from QFT.

If you are a grad student in high energy/nuclear/heavy ion physics, experimental or theoretical, do yourself a favour and buy this book. It starts really from the beginning (scalar fields, spinors, Dirac equation, propagators) and slowly but steadily reaches the point of gauge field theory, QCD, partons, electroweak interactions, spontaneous symmetry breaking and the Weinberg-Salam model. Don't expect to find anything rigorous about renormalization. Chapter 7 has some calculations about running coupling constants etc. but most of it is intuitive (describing rather than proving) in order to give you a glimpse about these matters and serve as a tool for later chapters. Although I knew the basics of Quantum Field Theory before I read this book, it helped me understand topics like deep inelastic scattering, parton distribution functions, scaling, weak interactions, spontaneous symmetry breaking. Caution: It is not a Quantum Field Theory book, it is a particle physics book. If you are looking for Gribov anomalies, Ward-Takahashi identities, and renormalization of the Weinberg-Salam model and stuff like that then this is not the place to find it. The book is about particles and their interactions. Its purpose is to prepare the serious student for more rigorous Quantum Field Theory books and give him/her the big picture of the standard model.

(the forest) rather than the little details of field theory (the tree). I strongly recommend it to any student in the field. The language is clear and the concepts are easy to follow. Its a down to earth approach trying to explain things in a clear cut manner rather than confusing the student with "big words" and terminology. A nice suplement to this book is the book by Chris Quigg (...huge number of references). In short, this book is worth its money ! Buy it !

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