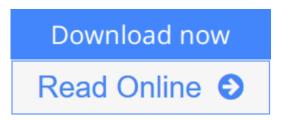


# Basic Concepts in Physics: From the Cosmos to Quarks (Undergraduate Lecture Notes in Physics)

By Masud Chaichian, Hugo Perez Rojas, Anca Tureanu



**Basic Concepts in Physics: From the Cosmos to Quarks (Undergraduate Lecture Notes in Physics)** By Masud Chaichian, Hugo Perez Rojas, Anca Tureanu

"Basic Concepts in Physics: From the Cosmos to Quarks" is the outcome of the authors' long and varied teaching experience in different countries and for different audiences, and gives an accessible and eminently readable introduction to all the main ideas of modern physics. The book's fresh approach, using a novel combination of historical and conceptual viewpoints, makes it ideal complementary reading to more standard textbooks. The first five chapters are devoted to classical physics, from planetary motion to special relativity, always keeping in mind its relevance to questions of contemporary interest. The next six chapters deal mainly with newer developments in physics, from quantum theory and general relativity to grand unified theories, and the book concludes by discussing the role of physics in living systems. A basic grounding in mathematics is required of the reader, but technicalities are avoided as far as possible; thus complex calculations are omitted so long as the essential ideas remain clear. The book is addressed to undergraduate and graduate students in physics and will also be appreciated by many professional physicists. It will likewise be of interest to students, researchers and teachers of other natural sciences, as well as to engineers, high-school teachers and the curious general reader, who will come to understand what physics is about and how it describes the different phenomena of Nature. Not only will readers of this book learn much about physics, they will also learn to love it.

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Review

Selected by Choice magazine as an "Outstanding Academic Title" for 2014

"This is a very high-quality presentation. The writing is lucid, and the theoretical discussions are easy to follow for anyone comfortable with the mathematics. ... the work is a valuable addition to college libraries. Professionals and researchers will also want it on their bookshelves; it provides an excellent refresher on a wide range of topics and can serve as a good starting point for expanding knowledge of new or unfamiliar subjects. Summing Up: Highly recommended. Lower-division undergraduates and above." (A. Spero, Choice, Vol. 51 (9), May, 2014)

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### About the Author

Masud Chaichian is an eminent particle physics theorist and professor of high-energy physics at the University of Helsinki.

Hugo Perez Rojas is Full Professor in the Institute of Cybernetics, Mathematics and Physics, Cuba.

Anca Tureanu is Academy Research Fellow in the Department of Physics at the university of Helsinki.

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