

1. Record Nr.	UNINA9910300382303321
Autore	Chaichian Masud
Titolo	Basic Concepts in Physics : From the Cosmos to Quarks // by Masud Chaichian, Hugo Perez Rojas, Anca Tureanu
Pubbl/distr/stampa	Berlin, Heidelberg : , : Springer Berlin Heidelberg : , : Imprint : Springer, , 2014
ISBN	3-642-19598-9
Edizione	[1st ed. 2014.]
Descrizione fisica	1 online resource (385 p.)
Collana	Undergraduate Lecture Notes in Physics, , 2192-4791
Disciplina	530
Soggetti	Mathematical physics Cosmology Field theory (Physics) Biochemistry Theoretical, Mathematical and Computational Physics Classical and Continuum Physics Biochemistry, general
Lingua di pubblicazione	Inglese
Formato	Materiale a stampa
Livello bibliografico	Monografia
Note generali	Description based upon print version of record.
Nota di contenuto	Gravitation and Newton Laws -- Entropy, Statistical Physics and Information -- Electromagnetism and Maxwell Equations -- Electromagnetic Waves -- The Special Theory of Relativity -- The Atom and Quantum Theory -- Quantum Electrodynamics -- Fermi-Dirac and Bose-Einstein Statistics -- The Four Fundamental Forces -- General Relativity and Cosmology -- Unification of the Forces of Nature -- Physics and Life -- Index.
Sommario/riassunto	"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. .
