

BOOK REVIEW

INTRODUCTION TO PHYSICS--A. Kitaigorodsky; Foreign Languages Publishing House, Moscow; 720 pages. Translated from Russian by O. Smith.

The book is meant for those who after leaving the secondary school have taken up engineering as their subject of study. It covers the entire field of Physics except those which are taught in high schools. The book is divided into three main parts. Part one deals with mechanical and thermal motion and includes in it the fundamental laws of mechanics, mechanical energy, momentum, rotation of a rigid body, vibrations, travelling and standing waves, acoustics, temperature and heat, thermodynamic processes and entropy, kinetic theory of gases and processes of transition to equilibrium. Part two deals with electromagnetic fields which includes electric and magnetic fields, electromagnetic fields, energy transformation in electromagnetic fields, electromagnetic radiation, phenomena of interference and scattering, diffraction of X-rays by crystals, double refraction, theory of relativity and the quantum nature of a field. The third part deals with structure and properties of matter and includes in it motion of charged particles, wave properties of microparticles, atomic structure, molecules, atomic nuclei, nuclear transformations, atomic structure of bodies, phase transformations, deformation of bodies, dielectrics, magnetic substances and effect of electronic structure on properties of bodies. The book thus covers practically the whole of Physics and the different basic aspects of it have been developed in a fairly logical sequence. But attempt has nowhere been made to make the treatments of different subjects exhaustive obviously because it is not meant for students of Physics degree course. Experimental physics and the historical development of different physical ideas have also not been considered in this book. The omission was intentional because firstly the author feels that in understanding of the modern techniques employed for an experiment in any branch of physics, knowledge of practically all the branches of physics is required and in consequence, 'experimental physics can not be subdivided' but should be treated as a separate subject; secondly since the book is not meant for those who want to be physicists inclusion of historical development was thought to be unnecessary. In spite of the omissions the basic physical ideas of the different branches have been explained in sufficiently clear and concise language. The book is undoubtedly a useful text book for students of the engineering degree courses and a helpful book for subsidiary reading by the students of physics honours courses.

A.K.D.

An introduction to physics. This course of 45 video lectures, as well as accompanying notes, have been developed and presented by Dr. Pervez Amirali Hoodbhoy, professor of physics at Quaid-e-Azam University, Islamabad, for the Virtual University of Pakistan, Lahore. © Copyright Virtual University of Pakistan.

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 - I. general information.
 - 1.1 Physics: An Introduction.
 - 1.2 Physical Quantities and Units.
 - 1.3 Accuracy, Precision, and Significant Figures.

The unifying aspect of physical laws and the basic simplicity of nature form the underlying themes of this text. In learning to apply these laws, you will, of course, study the most important topics in physics. More importantly, you will gain analytical abilities that will enable you to apply these laws far beyond the scope of what can be included in a single book.

- Introductory Physics I and II A lecture note style textbook series intended to support the teaching of introductory physics, with calculus, at a level suitable for Duke undergraduates.
- Classical Electrodynamics A lecture note style textbook intended to support the second semester (primarily the dynamical portion, little statics covered) of a two semester course of graduate Classical Electrodynamics. See Introduction to physics (MIT). Contents.
 - 1 The Underpinnings of Physics.
 - 2 Basic Physical Properties and Concepts.
 - 3 Topics.
 - 4 Learning resources.

The Underpinnings of Physics[edit | edit source]. In its purest sense, physics is the study of the way matter and energy interact in nature. Since early civilization, humans have sought to describe the workings of the world around them. Physics attempts to predict the outcome of an event by knowing certain conditions beforehand.