

Basics Of Mechanical Engineering

The Beginner's Guide to Engineering series is designed to provide a very simple, non-technical introduction to the fields of engineering for people with no experience in the fields. Each book in the series focuses on introducing the reader to the various concepts in the fields of engineering conceptually rather than mathematically. These books are a great resource for high school students that are considering majoring in one of the engineering fields, or for anyone else that is curious about engineering but has no background in the field. Books in the series: 1. The Beginner's Guide to Engineering: Chemical Engineering 2. The Beginner's Guide to Engineering: Computer Engineering 3. The Beginner's Guide to Engineering: Electrical Engineering 4. The Beginner's Guide to Engineering: Mechanical Engineering

Basics of Mechanical Engineering systematically develops the concepts and principles essential for understanding engineering thermodynamics, mechanics and strength of materials. This book is meant for first year B.Tech students of various technical universities. It will also be helpful for candidates preparing for various competitive examinations. In Basics of Mechanical Engineering Each chapter includes problems selected from university examination papers and question banks. Exhaustive question bank on theory problems at the end of each chapter. Includes all supplementary material required by the students like steam tables, section modulus. A large number of illustrative diagrams support the text, wherever required. S.I. units used throughout. Each chapter has been summed up in easy to recall points.

Special Features: · Simple language, point-wise descriptions in easy steps. · Chapter organization in exact agreement with sequence of syllabus. · Simple line diagrams. · Concepts supported by ample number of solved examples and illustrations. · Pedagogy in tune with examination pattern of RGTU. · Large number of Practice problems. · Model Question Papers

About The Book: This book is designed to suit the core engineering course on basic mechanical engineering offered to first year students of all engineering colleges in Madhya Pradesh. This book meets the syllabus requirements of Basic Mechanical Engineering and has been written for the first year students (all branches) of BE Degree course of RGPV Bhopal affiliated Engineering Institutes. A number of illustrations have been used to explain and clarify the subject matter. Numerous solved examples are presented to make understanding the content of the book easy. Objective type questions have been provided at the end of each chapter to help the students to quickly review the concepts.

This book provides a comprehensive and wide-ranging introduction to the fundamental principles of mechanical engineering in a distinct and clear manner. The book is intended for a core introductory course in the area of foundations and applications of mechanical engineering, prescribed for the first-year students of all disciplines of engineering. The book develops an intuitive understanding of the basic principles of thermodynamics as well as of the principles governing the conversion of heat into energy. Numerous illustrative examples are provided to fortify these concepts throughout. The book gives the students a feel for how thermodynamics is applied in engineering practice in the areas of heat engines, steam boilers, internal combustion engines, refrigeration and air conditioning, and to devices such as turbines, pumps and compressors. The book also provides a basic understanding of mechanical design, illustrating the principles through a discussion of devices designed for the transmission of motion and power such as couplings, clutches and brakes. No book on basic mechanical engineering is complete without an introduction to materials science. The text covers the treatment of the common engineering materials, highlighting their properties and applications. Finally, the role of lubrication and lubricants in reducing the wear and tear of parts in mechanical systems, is lucidly explained in the concluding chapter. The text features several fully worked-out examples, a fairly large number of numerical problems with answers, end-of-chapter review questions and multiple choice questions, which all enhance the value of the text

to the students. Besides the students studying for an engineering degree, this book is also suitable for study by the students of AMIE and the students of diploma level courses. Mechanical Engineer's Reference Book, 12th Edition is a 19-chapter text that covers the basic principles of mechanical engineering. The first chapters discuss the principles of mechanical engineering, electrical and electronics, microprocessors, instrumentation, and control. The succeeding chapters deal with the applications of computers and computer-integrated engineering systems; the design standards; and materials' properties and selection. Considerable chapters are devoted to other basic knowledge in mechanical engineering, including solid mechanics, tribology, power units and transmission, fuels and combustion, and alternative energy sources. The remaining chapters explore other engineering fields related to mechanical engineering, including nuclear, offshore, and plant engineering. These chapters also cover the topics of manufacturing methods, engineering mathematics, health and safety, and units of measurements. This book will be of great value to mechanical engineers.

?ABOUT THE BOOK: This introductory text is intended to first year students of Engineering. Here we will study three main topics (i) Thermodynamic principles (ii) Design Consideration (iii) Manufacturing processes. The knowledge and clear understanding of all these basic is essential to all branches of engineering

?OUTSTANDING FEATURES: This book is written in a very lucid language which makes it understandable to every type of student. The students should know how much and what should be written in the examinations. Contains various illustrative examples. The book covers the syllabus of all major universities. Consist of clear and self explanatory figures. The entire book is written in S.I Units.

?RECOMMENDATIONS: A Textbook for First Year Students of Engineering (All Branches), Competitive Examination, ICS, and AMIE Examinations In S.I Units For Degree, Diploma and A.I.M.E. Students and Practicing Civil Engineers.

?ABOUT THE AUTHOR: Prof. D.K. Chavan Professor Mechanical Engineering Department, Marathwada Mitra Mandal's College of Engineering (M.M.C.O.E.) Pune – 52 Ex. Assistant Professor Mechanical Engineering Department, Maharashtra Institute of Technology M.I.T., Pune – 38 Prof. G.K. Pathak Sr. Faculty Member, Mechanical Engineering Department, Maharashtra Institute of Technology M.I.T., Pune – 38

?BOOK DETAILS: ISBN: 978-81-89401-31-3 PAGES: 370+12 PAPERBACK EDITION: 4th, Year-2020

SIZE(CMS): L-23.7, B-15.7, H-1.4 ?For more Offers visit our Website:

www.standardbookhouse.com

Mechanical engineering, as its name suggests, deals with the mechanics of operation of mechanical systems. This is the branch of engineering which includes design, manufacturing, analysis and maintenance of mechanical systems. It combines engineering physics and mathematics principles with material science to design, analyse, manufacture and maintain mechanical systems. This book covers the field requires an understanding of core areas including thermodynamics, material science, manufacturing, energy conversion

systems, power transmission systems and mechanisms. My hope is that this book, through its careful explanations of concepts, practical examples and figures bridges the gap between knowledge and proper application of that knowledge. Basic Mechanical Engineering covers a wide range of topics and engineering concepts that are required to be learnt as in any undergraduate engineering course. Divided into three parts, this book lays emphasis on explaining the logic and physics of critical problems to develop analytical skills in students.

Mechanical engineering, as its name suggests, deals with the mechanics of operation of mechanical systems. This is the branch of engineering which includes design, manufacturing, analysis and maintenance of mechanical systems. It combines engineering physics and mathematics principles with material science to design, analyse, manufacture and maintain mechanical systems. This book covers the field requires an understanding of core areas including thermodynamics, material science, manufacturing, energy conversion systems, power transmission systems and mechanisms. This book includes basic knowledge of various mechanical systems used in day to day life. My hope is that this book, through its careful explanations of concepts, practical examples and figures bridges the gap between knowledge and proper application of that knowledge.

This book 'Basic Mechanical Engineering' has been written to provide knowledge and insight into various aspects of Mechanical Engineering. This book is intended as text book to be used by the students in the technical institutions i.e. Engineering Colleges and Polytechnics. The book covers Syllabi of various Universities on 'Basic Mechanical Engineering', 'Elements of Mechanical Engineering', 'Mechanical Engineering', 'Introduction to Mechanical Engineering' and 'Fundamentals of Mechanical Engineering' for the students of all the disciplines of Engineering. Adequate attention has been paid to emphasize on basic principles involved in the subject matter. The explanation in the text has been supported with line diagrams, along with numerous solved problems. The readers will find the book highly useful as a comprehensive text covering basic principles in simple language and easy to grasp formatting.

This series of 3 volumes explains all the basic principles of the science of mechanics as relevant to engineers and technicians. Easy to read, fully illustrated, providing many examples of practical applications.

The Book Provides A Glimpse Of The Fascinating Field Of Mechanical Engineering To The Entrants To Engineering Colleges. It Gives An Insight Into The Major Areas Of Mechanical Engineering, Like Power Production, Energy Alternatives, Production Alternatives And The Latest Computer Controlled Machine Tools. The Book Is Made Interesting With Numerous Sketches And Schematics - A Definite Advantage In Understanding The Subject.

Basic Mechanical Engineering is written by senior professors. The course is offered to the B.Tech students during first / second semester. The book covers syllabi of majority of Technological Universities. Introduces various units in SI system related to thermal engineering. Fuels used in engines and combustion of fuels are described.

Written with the first year engineering students of undergraduate level in mind, the well-designed textbook, now in its Third Edition, explains the fundamentals of

mechanical engineering in the area of thermodynamics, mechanics, theory of machines, strength of materials and fluid dynamics. As these subjects form a basic part of an engineer's education, this text is admirably suited to meet the needs of the common course in mechanical engineering prescribed in the curricula of almost all branches of engineering. This revised edition includes a new chapter on 'Fluid Dynamics' to meet the course requirement. Key Features

- Presents an introduction to basic mechanical engineering topics required by all engineering students in their studies.
- Includes a series of objective type question (True and False, Fill in the Blanks and Multiple Choice Questions) with explanatory answers to help students in preparing for competitive examinations.
- Provides a large number of solved problems culled from the latest university and competitive examination papers which help in understanding theory.

This book is designed to suit the core engineering course on basic mechanical engineering offered to first year students of all engineering colleges. Objective type questions have been provided at the end of each chapter to help the students to quickly review the concepts.

Basic Mechanical Engineering 4e builds on the success of the previous edition by providing up-to-date information on the latest trends in the field. The entire book now has a student centric approach with the contents being presented in a simple and lucid style. A greater number of illustrations have been included which will provide adequate visual inputs in conjunction with textual explanations thereby significantly enhancing the learning experience. The author, who has almost 6 decades of teaching experience, has ensured that the contents are as per student's requirements.

This textbook for the first year students of all branches of Rajiv Gandhi Proudyogiki Vishwavidyalaya (RGPV), Bhopal(M.P.), It has been strictly according to the new syllabus of RGPV. The subject matter has been explained clearly and precisely in the simplest way. Salient features are :250 Solved ExamplesA number of exercises at the end of every chapter Multi-Choice.

Basic Mechanical Engineering curriculum focuses on what mechanical engineering is all about: design, analysis, materials and manufacture of systems. To that extent, all mathematics, science, and engineering courses relate their contents to analysis, design, development and manufacturing. Mechanical Engineering explains about the knowledge and understanding of the concepts in the mechanical engineering discipline. This book focuses on basic engineering concepts which will help student to perform well in the engineering field. The following topics are covered in this subject:

- Design fundamentals
- Engineering materials
- Manufacturing processes
- Machine tools
- Thermal Engineering
- Theory of Machines and Machine Design
- Power absorbing devices
- Steam Boilers, Compressors, Engines, and Turbines
- Refrigeration and Air-conditioning

Key Features

- Course learning objectives
- All topics explained in simple and lucid manner
- Sufficient theory questions and Numerical problems for practice

This book addresses various aspects of civil and mechanical engineering field.

We have included numerous neatly drawn figures and problems with solutions for the better understanding of the subject. The book is organized in six modules as per the syllabus of the first/second semester B.Tech. course under APJ Abdul Kalam Technological University, Kerala.

[Copyright: a9d0cddb1c683c2990d890e713641e6a](#)