

Basic Electrical Engineering By Vn Mittle And Arvind Mittal

There has been overwhelming response from the readers of this text. Based on their feedback and suggestions, this book has been enlarged and thoroughly revised in its Fifth Edition. Besides updating the sixteen chapters of the previous edition, it now incorporates ten new chapters dealing with synchronous machines, single/three phase motors, ac commutator motors and stepper motors. The present text, written in a lucid style, is the culmination of more than four decades of the author's long experience in teaching of electrical engineering subjects, especially electrical machines at undergraduate and postgraduate levels. Key features

- Easy to follow, understand and implement.
- Includes about 440 worked-out examples.
- Contains 721 MCQs (with answers) to help students measure their understanding and analysing skills and evaluate their knowledge.
- Offers about 515 chapter-end exercises with answers to build problem solving skills and gain hands-on experience and self-confidence.
- Includes many real-life examples to enable students to analyse and implement theoretical concepts in real-life situations.
- Difficult concepts like commutation explained in great detail so as to make students grasp concept with clear understanding.

The book is primarily designed for undergraduate and postgraduate students of Electrical and Electronics Engineering. Besides, the students of all other branches of engineering will find this text useful for their course study.

The book is written per the syllabus of first year engineering degree course for various universities. It covers basic topics of electrical, electronics and communication engineering. It also includes worked out examples, University examination questions and answers, exercise, etc in every chapter. This book is suitable for course in basic electrical and electronics engineering under various Universities. Authors have tried to elucidate the topics in such a way that even a mediocre student can assimilate them. Many solved problems, sample question papers and exercise given in every section will provide a thorough understanding of the topics. Other features include attractive writing style, well structured equations and numerical examples, pictures of high clarity, etc. This book is one among prescribed textbooks for the syllabus of BIT, Mesra, Ranchi.

Electrical Installations Technology covers the syllabus of the City and Guilds of London Institute course No. 51, the "Electricians B Certificate". This book is composed of 15 chapters that deal with basic electrical science and electrical installations. The introductory chapters discuss the fundamentals and basic electrical principles, including the concept of mechanics, heat, magnetic fields, electric currents, power, and energy. These chapters also explore the atomic theory of electric current and the electric circuit, conductors, and insulators. The subsequent chapter focuses on the chemistry of an electric cell, which is classified into two types, namely, the primary and secondary cells. This text also describes the principles, construction, types, and specifications of direct current machines. A chapter emphasizes the storage of energy for short periods in a capacitor, along with a brief discussion of its theory and construction. Other chapters are devoted to alternating-current systems. The remaining chapters cover the commonly used electrical measuring instruments in electrical installation work. This book is an invaluable source for electricians.

Superconducting technology is potentially important as one of the future smart grid technologies. It is a combination of superconductor materials, electrical engineering, cryogenic insulation, cryogenics and cryostats. There has been no specific book fully describing this branch of science and technology in electrical engineering. However, this book includes these areas, and is essential for those majoring in applied superconductivity in electrical engineering. Recently, superconducting technology has made great progress. Many universities and companies are involved in applied superconductivity with the support of government. Over the next five years, departments of electrical engineering in universities and companies will become more involved in this area. This book:

- will enable people to directly carry out research on applied superconductivity in electrical engineering
- is more comprehensive and practical when compared to other advances
- presents a clear introduction to the application of superconductor in electrical engineering and related fundamental technologies
- arms readers with the technological aspects of superconductivity required to produce a machine
- covers power supplying technologies in superconducting electric apparatus
- is well organized and adaptable for students, lecturers, researchers and engineers
- lecture slides suitable for lecturers available on the Wiley Companion Website

Fundamental Elements of Applied Superconductivity in Electrical Engineering is ideal for academic researchers, graduates and undergraduate students in electrical engineering. It is also an excellent reference work for superconducting device researchers and engineers.

This book deals with the fundamentals of electrical engineering concepts like design & application of circuitry, equipment for power generation & distribution and machine control. Features Transformers discussed in detail. Thoroughly revised chapters on Single and Three-Phases Induction Motors. New chapter on: 1. Three-Phase Alternator 2. Electromechanical Energy Conversion 3. Testing of DC Machines

The Newnes Know It All Series takes the best of what our authors have written to create hard-working desk references that will be an engineer's first port of call for key information, design techniques and rules of thumb. Guaranteed not to gather dust on a shelf! Electrical engineers need to master a wide area of topics to excel. The Electrical Engineering Know It All covers every angle including Real-World Signals and Systems, Electromagnetics, and Power systems. A 360-degree view from our best-selling authors. Topics include digital, analog, and power electronics, and electric circuits. The ultimate hard-working desk reference; all the essential information, techniques and tricks of the trade in one volume.

Basic Electrical and Electronics Engineering provides an overview of the basics of electrical and electronic engineering that are required at the undergraduate level. The book allows students outside electrical and electronics engineering to easily

Designed for the first year engineering students of all branches in RGPV, this text offers detailed coverage of Basic Electrical and Electronics Engineering course. The emphasis is given on clarification of basic concepts, principles and techniques. Enriched with lucid language, it covers the complete syllabus of RGPV. Numerous solved examples and practice questions are given in the text for better understanding of the concepts.

A concise and original presentation of the fundamentals for 'new to the subject' electrical engineers. This book has been written for students on electrical engineering courses who don't necessarily possess prior knowledge of electrical circuits. Based on the author's own teaching experience, it covers the analysis of simple electrical circuits consisting of a few essential components using fundamental and well-known methods and techniques. Although the above content has been included in other circuit analysis books, this one aims at teaching young engineers not only from electrical and electronics engineering, but also from other areas, such as mechanical engineering, aerospace engineering, mining engineering, and chemical engineering, with unique pedagogical features such as a puzzle-like approach and negative-case examples (such as the unique "When Things Go Wrong..." section at the end of each chapter). Believing that the traditional texts in this area can be overwhelming for beginners, the author approaches his subject by

providing numerous examples for the student to solve and practice before learning more complicated components and circuits. These exercises and problems will provide instructors with in-class activities and tutorials, thus establishing this book as the perfect complement to the more traditional texts. All examples and problems contain detailed analysis of various circuits, and are solved using a 'recipe' approach, providing a code that motivates students to decode and apply to real-life engineering scenarios Covers the basic topics of resistors, voltage and current sources, capacitors and inductors, Ohm's and Kirchhoff's Laws, nodal and mesh analysis, black-box approach, and Thevenin/Norton equivalent circuits for both DC and AC cases in transient and steady states Aims to stimulate interest and discussion in the basics, before moving on to more modern circuits with higher-level components Includes more than 130 solved examples and 120 detailed exercises with supplementary solutions Accompanying website to provide supplementary materials www.wiley.com/go/ergul4412

This book serves as a tool for any engineer who wants to learn about circuits, electrical machines and drives, power electronics, and power systems basics From time to time, engineers find they need to brush up on certain fundamentals within electrical engineering. This clear and concise book is the ideal learning tool for them to quickly learn the basics or develop an understanding of newer topics. Fundamentals of Electric Power Engineering: From Electromagnetics to Power Systems helps non-electrical engineers amass power system information quickly by imparting tools and trade tricks for remembering basic concepts and grasping new developments. Created to provide more in-depth knowledge of fundamentals—rather than a broad range of applications only—this comprehensive and up-to-date book: Covers topics such as circuits, electrical machines and drives, power electronics, and power system basics as well as new generation technologies Allows non-electrical engineers to build their electrical knowledge quickly Includes exercises with worked solutions to assist readers in grasping concepts found in the book Contains "in-depth" side bars throughout which pique the reader's curiosity Fundamentals of Electric Power Engineering is an ideal refresher course for those involved in this interdisciplinary branch. For supplementary files for this book, please visit <http://booksupport.wiley.com/>

This is the only book on the market that has been conceived and deliberately written as a one-semester text on basic electric circuit theory. As such, this book employs a novel approach to the exposition of the material in which phasors and ac steady-state analysis are introduced at the beginning. This allows one to use phasors in the discussion of transients excited by ac sources, which makes the presentation of transients more comprehensive and meaningful. Furthermore, the machinery of phasors paves the road to the introduction of transfer functions, which are then used in the analysis of transients and the discussion of Bode plots and filters. Another salient feature of the text is the consolidation into one chapter of the material concerned with dependent sources and operational amplifiers. Dependent sources are introduced as linear models for transistors on the basis of small signal analysis. In the text, PSpice simulations are prominently featured to reinforce the basic material and understanding of circuit analysis. Key Features *

- * Designed as a comprehensive one-semester text in basic circuit theory
- * Features early introduction of phasors and ac steady-state analysis
- * Covers the application of phasors and ac steady-state analysis
- * Consolidates the material on dependent sources and operational amplifiers
- * Places emphasis on connections between circuit theory and other areas in electrical engineering
- * Includes PSpice tutorials and examples
- * Introduces the design of active filters
- * Includes problems at the end of every chapter
- * Priced well below similar books designed for year-long courses

The primary objective of vol. I of A Text Book of Electrical Technology is to provide a comprehensive treatment of topics in Basic Electrical Engineering both for electrical as well as non-electrical students pursuing their studies in civil, mechanical, mining, textile, chemical, industrial, environmental, aerospace, electronic and computer engineering both at the Degree and diploma level. Based on the suggestions received from our esteemed readers, both from India and abroad, the scope of the book has been enlarged according to their requirements. Almost half the solved examples have been deleted and replaced by latest examination papers set up to 1994 in different engineering collage and technical institutions in India and abroad.

The book is a review of essential skills that an entry-level or experienced engineer must be able to demonstrate on a job interview and perform when hired. It will help engineers prepare for interviews by demonstrating application of basic principles to practical problems. Hiring managers will find the book useful because it defines a common ground between the student's academic background and the company's product or technology-specific needs, thereby allowing managers to minimize their risk when making hiring decisions. Ten Essential Skills contains a series of "How to" chapters. Each chapter realizes a goal, such as designing an active filter or designing a discrete servo. The primary value of these chapters, however, is that they apply engineering fundamentals to practical problems. The book is a handy reference for engineers in their first years on the job. Enables recent graduates in engineering to succeed in challenging technical interviews Written in an intuitive, easy-to-follow style for the benefit of busy students and employers Book focuses on the intersection between company-specific knowledge and engineering fundamentals Companion website includes interview practice problems and advanced material

Unlike books currently on the market, this book attempts to satisfy two goals: combine circuits and electronics into a single, unified treatment, and establish a strong connection with the contemporary world of digital systems. It will introduce a new way of looking not only at the treatment of circuits, but also at the treatment of introductory coursework in engineering in general. Using the concept of "abstraction," the book attempts to form a bridge between the world of physics and the world of large computer systems. In particular, it attempts to unify electrical engineering and computer science as the art of creating and exploiting successive abstractions to manage the complexity of building useful electrical systems. Computer systems are simply one type of electrical systems. +Balances circuits theory with practical digital electronics applications. +Illustrates concepts with real devices. +Supports the popular circuits and electronics course on the MIT OpenCourse Ware from which professionals worldwide study this new approach. +Written by two educators well known for their innovative teaching and research and their

collaboration with industry. +Focuses on contemporary MOS technology.

The aim of this book is to provide a consolidated text for the first year B.E. Computer Science and Engineering students and B.Tech Information Technology students of Anna University. The syllabus has been thoroughly revised for the non-semester yearly pattern by the University. The book, made up of five chapters, systematically covers the five units of the syllabus. It begins with a detailed discussion on the fundamentals of electric circuits. DC circuits, AC circuits, 3-phase circuits, resonance and the network theorems. Lecture-type presentation of the rudiments of the fundamentals in conjunction with hundreds of solved examples is the strength of this book. Magnetic circuits and various magnetic elements and their properties, with number of illustrations are presented. DC machines and transformers are further dealt with. Equivalent circuits of machines supported with the respective photographs will ease the reader to understand the concepts of machines much better. Synchronous machines and asynchronous machines and fundamentals of control systems with various practical examples and relevant worked illustrations conclude this book. A large number of numerical illustrations and diagrammatic representations make this book valuable for students and teachers.

Offers an understanding of the theoretical principles in electronic engineering, in clear and understandable terms Introductory Electrical Engineering With Math Explained in Accessible Language offers a text that explores the basic concepts and principles of electrical engineering. The author—a noted expert on the topic—explains the underlying mathematics involved in electrical engineering through the use of examples that help with an understanding of the theory. The text contains clear explanations of the mathematical theory that is needed to understand every topic presented, which will aid students in engineering courses who may lack the necessary basic math knowledge. Designed to breakdown complex math concepts into understandable terms, the book incorporates several math tricks and knowledge such as matrices determinant and multiplication. The author also explains how certain mathematical formulas are derived. In addition, the text includes tables of integrals and other tables to help, for example, find resistors' and capacitors' values. The author provides the accessible language, examples, and images that make the topic accessible and understandable. This important book:

- Contains discussion of concepts that go from the basic to the complex, always using simplified language
- Provides examples, diagrams, and illustrations that work to enhance explanations
- Explains the mathematical knowledge that is crucial to understanding electrical concepts
- Contains both solved exercises in-line with the explanations

Written for students, electronic hobbyists and technicians, Introductory Electrical Engineering With Math Explained in Accessible Language is a much-needed text that is filled with the basics concepts of electrical engineering with the approachable math that aids in an understanding of the topic.

This comprehensive book with a blend of theory and solved problems on Basic Electrical Engineering has been updated and upgraded in the Second Edition as per the current needs to cater undergraduate students of all branches of engineering and to all those who are appearing in competitive examinations such as AMIE, GATE and graduate IETE. The text provides a lucid yet exhaustive exposition of the fundamental concepts, techniques and devices in basic electrical engineering through a series of carefully crafted solved examples, multiple choice (objective type) questions and review questions. The book covers, in general, three major areas: electric circuit theory, electric machines, and measurement and instrumentation systems.

This book is designed based on revised syllabus of Gujarat Technological University, Gujarat (AICTE model curriculum) for under-graduate (B.Tech/BE) students of all branches, those who study Basic Electrical Engineering as one of the subject in their curriculum. The primary goal of this book is to establish a firm understanding of the basic laws of Electric Circuits, Network Theorems, Resonance, Three-phase circuits, Transformers, Electrical Machines and Electrical Installation.

This book is prepared as per the syllabus of Dr A P J Abdul Kalam Technical University, Uttar Pradesh for first year B. Tech (Engineering) course using the reference books given in the course syllabus. Authors have tried to elucidate the topics such a way that even a mediocre student can assimilate them. Many solved problems, sample question papers and exercise given in every section will provide a thorough understanding of topics

This book presents comprehensive coverage of all the basic concepts in electrical engineering. It is designed for undergraduate students of almost all branches of engineering for an introductory course in essentials of electrical engineering. This book explains in detail the properties of different electric circuit elements, such as resistors, inductors and capacitors. The fundamental concepts of dc circuit laws, such as Kirchhoff's current and voltage laws, and various network theorems, such as Thevenin's theorem, Norton's theorem, superposition theorem, maximum power transfer theorem, reciprocity theorem and Millman's theorem are thoroughly discussed. The book also presents the analysis of ac circuits, and discusses transient analysis due to switch operations in ac and dc circuits as well as analysis of three-phase circuits. It describes series and parallel RLC circuits, magnetic circuits, and the working principle of different kinds of transformers. In addition, the book explains the principle of energy conversion, the operating characteristics of dc machines, three-phase induction machines and synchronous machines as well as single-phase motors. Finally, the book includes a discussion on technologies of electric power generation along with the different types of energy sources. Key Features : Includes numerous solved examples and illustrations for sound conceptual understanding. Provides well-graded chapter-end problems to develop the problem-solving capability of the students. Supplemented with three appendices addressing matrix algebra, trigonometric identities and Laplace transforms of commonly used functions to help students understand the mathematical concepts required for the study of electrical engineering.

The book is written for an undergraduate course on the Basic Electrical Engineering. It provides comprehensive explanation of theory and practice of electrical engineering. It elaborates various aspects of d.c. and a.c. circuit analysis, magnetic circuits, measuring instruments, single phase transformers and various electrical machines. The book starts with the concepts of electric charge, current and potential difference. It explains Kirchhoff's laws, star-delta transformation, mesh analysis and node analysis. It also covers the application of various network theorems in analyzing d.c. circuits. The book incorporates detailed discussion of steady state analysis of single-phase series and parallel a.c. circuits along with the resonance. The book also explains the three phase balanced circuits, three phase power measurement and power factor improvement. The simple techniques and stepwise methods used to explain the phasor diagrams is the feature of the book. The book teaches the theory of various electrical measuring instruments. The book also covers the concept of earthing and electrical safety, which is most important while dealing with the electrical equipment's. The book also includes the discussion of magnetic circuits, self and mutual inductances and magnetic hysteresis. The book further explains the details of single-phase transformers and various electrical machines such as d.c. machines, three phase and single-phase induction motors and synchronous machines. The brief introduction of power system is also incorporated in the book. The book uses plain, lucid language to explain each topic. The book provides the logical method of explaining the various complicated topics and stepwise methods to make the understanding easy. All the chapters are arranged in a proper sequence that permits each topic to build upon earlier studies. The variety of solved examples is the feature of this book which helps to inculcate the knowledge of the basic electrical engineering in the students. The book explains the philosophy of the subject which makes the understanding of the concepts very clear and makes the subject more interesting.

Basic Electrical Engineering is a core course for the first-year students of all engineering disciplines across the country. This course enables them to apply the basic concepts of Electrical engineering for multi-disciplinary tasks, and lays the foundation for higher level courses in electrical and electronics engineering degrees. An established hallmark, this revised edition of the book continues to dwell on all the key concepts and applications in the field and covers the subject in its entirety. Curated with great care, it provides an unmatched exposure to the fundamentals of Electricity, Network theory, Electric machines and Measuring instruments. Rich pool of problems and appendices enhance the utility of the book and make it a lasting resource for students as well as instructors.

Electrical Engineering Principles for Technicians covers the syllabus of Electrical Engineering Principles III of the C.G.L.I. Course for Electrical Technicians. It provides a basic introduction to electrical principles and their practical application. Comprised of eight chapter, the book discusses a wide range of topics including magnetic circuits, rectifier and thermocouple instruments, direct-current machines, transformers, and electric circuits. It also explains the alternating current theory and the generation of a three-phase supply system. The book ends by discussing the rate of change of current in an inductor and a capacitor. Students taking electrical engineering and technician courses will find this book very useful.

Basic Electric Circuits, Second Edition details the underlying principle that governs the electric-circuit theory. The title provides problems and worked examples that supplement the discussion of applications of the ideas. The text first deals with conducting and insulating materials, and then proceeds to talking about semiconductor junction devices. Next, the selection covers resistance, capacitance, and inductance, along with different kinds of circuitry. The title also discusses graphical methods, symbolic method of analysis, and elementary transmission-line analysis. The book will be of great use to students of electrical engineering. The text will also serve as a reference material for professional engineers.

Electrical and instrumentation engineering is changing rapidly, and it is important for the veteran engineer in the field not only to have a valuable and reliable reference work which he or she can consult for basic concepts, but also to be up to date on any changes to basic equipment or processes that might have occurred in the field. Covering all of the basic concepts, from three-phase power supply and its various types of connection and conversion, to power equation and discussions of the protection of power system, to transformers, voltage regulation, and many other concepts, this volume is the one-stop, "go to" for all of the engineer's questions on basic electrical and instrumentation engineering. There are chapters covering the construction and working principle of the DC machine, all varieties of motors, fundamental concepts and operating principles of measuring, and instrumentation, both from a "high end" point of view and the point of view of developing countries, emphasizing low-cost methods. A valuable reference for engineers, scientists, chemists, and students, this volume is applicable to many different fields, across many different industries, at all levels. It is a must-have for any library.

This book is designed to help the first-year engineering students in building their concepts in the course of Basic Electrical Engineering, It introduces the subject in a simple and lucid manner for a better understanding. It sdopts a student friendly approach with many solved examples and unsolved questions. This book will serve as a stepping stone for students in understanding the course efficiently. It provides complete coverage of MAKAUT 2018 syllabu.

This textbook "Basic Electrical Engineering" is based on the latest syllabus of the Universities, AICTE and Educational Institutes. In this edition, some material of the book has been rewritten to make the presentation easily comprehensible. More illustrative examples mainly from IAS, IES and GATE and other competitive examinations have been added. Various problems with answers have been added to support the text. For quick revision, summary/highlights are given at the end of each chapter. Salient Features: · DC Circuits · AC Circuits · Transformers · Electrical Machines · Power converters · Electrical Installations

Foundations of Electrical Engineering: Fields—Networks—Waves describes the general principles of electrical engineering, with emphasis on fields, networks, and waves. The limitations of validity are defined and methods of calculation are outlined. Examples are used to illustrate the theory and microphysical explanations based on simple models are given. This book is divided into five sections and begins with an overview of the inductive approach to Maxwell's equations, along with the uniqueness of their solution. Energy conversion in the electromagnetic field as well as the basic concepts of vector algebra and vector analysis are also considered. Subsequent chapters focus on static and steady fields, including cylindrically symmetrical fields and magnetic fields; the laws of network analysis and network synthesis; transient phenomena; and transmission lines. The remaining sections deal with electromagnetic waves, with emphasis on boundary value problems, and further developments in electrical engineering. This monograph will be of interest to students of electrical engineering and mathematics.

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