

# electromagnetism textbooks

**electromagnetism textbooks** are essential resources for anyone looking to understand the principles of electromagnetism, a fundamental branch of physics that studies the interactions between electric charges and magnetic fields. These textbooks cater to a variety of audiences, including high school students, university undergraduates, and advanced researchers. In this comprehensive article, we will explore the importance of electromagnetism textbooks, the key topics they cover, recommended titles for different academic levels, and tips for selecting the right textbook. By the end, readers will have a clearer understanding of the best resources available for mastering the concepts of electromagnetism.

- Importance of Electromagnetism Textbooks
- Key Topics Covered in Electromagnetism
- Recommended Electromagnetism Textbooks
- How to Select the Right Electromagnetism Textbook
- Future Trends in Electromagnetism Education

## Importance of Electromagnetism Textbooks

Electromagnetism textbooks serve as foundational tools for learning the principles that govern electricity and magnetism. They are critical in both educational and professional settings, providing structured knowledge that supports theoretical understanding and practical application. Mastery of electromagnetism is vital for numerous fields, including electrical engineering, physics, and materials science.

These textbooks not only lay the groundwork for basic concepts but also delve into advanced theories and applications. They often include problems and case studies that encourage critical thinking and application of concepts to real-world scenarios. Furthermore, with the increasing reliance on technology and innovation, understanding electromagnetism is more pertinent than ever.

## Key Topics Covered in Electromagnetism

Electromagnetism is a vast field encompassing various topics that are

typically covered in textbooks. Understanding these topics is crucial for anyone studying the subject. Below are some of the key areas often explored in electromagnetism textbooks:

- Electric Charges and Fields
- Magnetic Fields and Forces
- Electromagnetic Induction
- Maxwell's Equations
- Electromagnetic Waves
- Applications of Electromagnetism in Technology

## **Electric Charges and Fields**

The study of electric charges and their associated fields forms the backbone of electromagnetism. Textbooks typically explain concepts such as Coulomb's law, electric field lines, and the principle of superposition. These concepts help students understand how charges interact and the forces that arise between them.

## **Magnetic Fields and Forces**

This section covers the nature of magnetic fields generated by currents, the Biot-Savart law, and the Lorentz force law. Textbooks often provide diagrams and illustrations to visualize how magnetic fields operate, which is critical for grasping the interplay between electricity and magnetism.

## **Electromagnetic Induction**

Electromagnetic induction is a fundamental phenomenon where a changing magnetic field can induce an electric current. Textbooks explain Faraday's law of induction and Lenz's law, providing insights into how generators and transformers operate. Practical examples illustrate the importance of induction in everyday technology.

# Maxwell's Equations

Maxwell's equations are a set of four fundamental equations that describe how electric and magnetic fields interact. A thorough understanding of these equations is essential for advanced studies in electromagnetism. Textbooks typically break down each equation, explaining its significance and application.

## Electromagnetic Waves

This topic covers wave propagation, the electromagnetic spectrum, and the principles behind radio waves, microwaves, and light waves. Textbooks often include mathematical derivations alongside practical applications, aiding students in comprehending how these waves are utilized in communication technologies.

## Applications of Electromagnetism in Technology

Modern technology heavily relies on electromagnetic principles. Textbooks provide case studies and examples of applications in various fields, including telecommunications, medical imaging (such as MRI), and power generation. Understanding these applications helps students appreciate the relevance of electromagnetism in today's world.

## Recommended Electromagnetism Textbooks

Choosing the right textbook can significantly impact the learning experience. Below are some recommended electromagnetism textbooks suitable for different academic levels:

### For Beginners

- **“Concepts of Modern Physics” by Arthur Beiser:** This book provides a gentle introduction to electromagnetism along with other fundamental concepts in physics.
- **“University Physics” by Young and Freedman:** A comprehensive resource covering basic to intermediate topics in electromagnetism.

## For Intermediate Learners

- **“Introduction to Electrodynamics” by David J. Griffiths:** Widely regarded as one of the best textbooks for undergraduates, this book offers clear explanations and a wealth of problem sets.
- **“Electromagnetism” by Gerald L. Pollack and Daniel R. Stump:** This text provides a more in-depth look at the subject, suitable for those with a basic understanding.

## For Advanced Studies

- **“Classical Electrodynamics” by John David Jackson:** A challenging yet highly respected text that delves into advanced topics suitable for graduate students.
- **“The Feynman Lectures on Physics, Vol. II” by Richard Feynman:** While not exclusively about electromagnetism, this classic includes insightful discussions on electromagnetic theory.

## How to Select the Right Electromagnetism Textbook

When choosing an electromagnetism textbook, consider the following factors to ensure the material aligns with your learning goals:

- **Level of Understanding:** Assess your current knowledge and look for textbooks that match your level—beginner, intermediate, or advanced.
- **Learning Style:** Some textbooks focus more on theory, while others emphasize problem-solving. Identify which approach helps you learn best.
- **Supplementary Resources:** Look for textbooks that come with additional resources, such as online materials, problem sets, and solutions, to enhance your study experience.
- **Reviews and Recommendations:** Read reviews and seek recommendations from peers or educators to find highly regarded textbooks in the field.

# **Future Trends in Electromagnetism Education**

The future of electromagnetism education is being shaped by technological advancements and evolving educational philosophies. Online courses and digital textbooks are becoming increasingly popular, providing more interactive and engaging learning experiences. Additionally, the integration of simulations and virtual labs allows students to visualize complex concepts, thereby enhancing understanding.

Furthermore, interdisciplinary approaches that combine electromagnetism with fields like computer science, materials science, and renewable energy are becoming more common. This trend reflects the interconnected nature of modern scientific inquiry and the importance of electromagnetism in driving innovation across various sectors.

## **Q: What are the best textbooks for learning electromagnetism at a high school level?**

A: For high school students, "Concepts of Modern Physics" by Arthur Beiser and "University Physics" by Young and Freedman are excellent choices. They provide clear explanations and foundational concepts in electromagnetism.

## **Q: How do I choose the right electromagnetism textbook for my studies?**

A: Consider your current level of understanding, preferred learning style, availability of supplementary resources, and reviews from peers or educators when selecting a textbook.

## **Q: Are there electromagnetism textbooks that offer practical applications?**

A: Yes, many textbooks, such as "Electromagnetism" by Pollack and Stump, include sections on practical applications, showing how electromagnetism is utilized in technology and engineering.

## **Q: What is the significance of Maxwell's equations in electromagnetism?**

A: Maxwell's equations are fundamental to understanding how electric and

magnetic fields interact. They form the theoretical basis for much of classical electromagnetism and are crucial for advanced studies in the field.

### **Q: Can electromagnetism textbooks help with engineering applications?**

A: Absolutely! Electromagnetism textbooks often cover principles that are essential for electrical engineering, including circuit design, electromagnetic fields, and wave propagation.

### **Q: What topics should I focus on when studying electromagnetism?**

A: Key topics include electric charges and fields, magnetic fields and forces, electromagnetic induction, Maxwell's equations, and electromagnetic waves. Mastery of these areas is crucial for a comprehensive understanding of electromagnetism.

### **Q: Are there digital resources available for learning electromagnetism?**

A: Yes, many textbooks now offer digital versions with interactive features, online problem sets, and video lectures, making them more accessible and engaging for students.

### **Q: How can I supplement my learning from electromagnetism textbooks?**

A: To enhance your learning, consider using online courses, joining study groups, utilizing simulation software, and practicing problem sets from textbooks or online resources.

### **Q: What advancements are influencing the study of electromagnetism?**

A: The integration of technology in education, interdisciplinary approaches incorporating electromagnetism with fields like renewable energy, and the use of virtual labs are significantly influencing the study of electromagnetism.

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In questions of science, the authority of a thousand is not worth the humble reasoning of a single individual. Galileo Galilei, physicist and astronomer (1564-1642) This book is a second edition of "Classical Electromagnetic Theory" which derived from a set of lecture notes compiled over a number of years of teaching electromagnetic theory to fourth year physics and electrical engineering students. These students had a previous exposure to electricity and magnetism, and the material from the first four and a half chapters was presented as a review. I believe that the book makes a reasonable transition between the many excellent elementary books such as Griffith's Introduction to Electrodynamics and the obviously graduate level books such as Jackson's Classical Electrodynamics or Landau and Lifshitz' Electrodynamics of Continuous Media. If the students have had a previous exposure to Electromagnetic theory, all the material can be reasonably covered in two semesters. Neophytes should probably spend a semester on the first four or five chapters as well as, depending on their mathematical background, the Appendices B to F. For a shorter or more elementary course, the material on spherical waves, waveguides, and waves in anisotropic media may be omitted without loss of continuity.

**electromagnetism textbooks: The Electrical Engineering Handbook** Wai Kai Chen, 2004-11-16 The Electrical Engineer's Handbook is an invaluable reference source for all practicing electrical engineers and students. Encompassing 79 chapters, this book is intended to enlighten and refresh knowledge of the practicing engineer or to help educate engineering students. This text will most likely be the engineer's first choice in looking for a solution; extensive, complete references to other sources are provided throughout. No other book has the breadth and depth of coverage available here. This is a must-have for all practitioners and students! The Electrical Engineer's Handbook provides the most up-to-date information in: Circuits and Networks, Electric Power Systems, Electronics, Computer-Aided Design and Optimization, VLSI Systems, Signal Processing, Digital Systems and Computer Engineering, Digital Communication and Communication Networks, Electromagnetics and Control and Systems. About the Editor-in-Chief...Wai-Kai Chen is Professor and Head Emeritus of the Department of Electrical Engineering and Computer Science at the University of Illinois at Chicago. He has extensive experience in education and industry and is very active professionally in the fields of circuits and systems. He was Editor-in-Chief of the IEEE Transactions on Circuits and Systems, Series I and II, President of the IEEE Circuits and Systems Society and is the Founding Editor and Editor-in-Chief of the Journal of Circuits, Systems and Computers. He is the recipient of the Golden Jubilee Medal, the Education Award, and the Meritorious Service Award from the IEEE Circuits and Systems Society, and the Third Millennium Medal from the IEEE. Professor Chen is a fellow of the IEEE and the American Association for the Advancement of Science.\* 77 chapters encompass the entire field of electrical engineering.\* THOUSANDS of valuable figures, tables, formulas, and definitions.\* Extensive bibliographic references.

**electromagnetism textbooks: Advanced Classical Electromagnetism** Robert Wald, 2022-03-22 This is a concise, beginning graduate-level textbook on classical electromagnetism, the branch of physics that describes the interaction of electric currents or fields and magnetic fields. Electromagnetism (also called electrodynamics) is one of the pillars of modern physics and, as such, of the modern physics curriculum, with courses on electromagnetism required at the undergraduate and graduate levels. These courses traditionally proceed in a quasi-historical fashion, starting from

equations and laws that were first formulated in the eighteenth and nineteenth centuries and still form the foundations of our understanding of electromagnetism. However, as Robert Wald argues, teaching in this way can be imprecise and tends to promote outdated ways of thinking about the subject. This book rethinks how electromagnetism is presented at the graduate level, offering a corrective that aims to bring teaching up to date with our more modern understanding of the topic. The book begins by debunking four common misconceptions, or myths, that can hinder a deep conceptual understanding of electromagnetism. Wald then proceeds through the major topics first-year grad courses (and textbooks) in electromagnetism typically cover, including electrostatics, dielectrics, magnetostatics, electrodynamics, geometric optics, special relativity, gauge theory, and point charge. Wald's aim throughout is to explain to students how to think about electromagnetism from a modern and mathematically precise perspective, formulating all the key conceptual ideas and results in the field clearly and concisely, while forgoing extensive collections of examples and applications. The book could be used as the basis for or as a supplement to a course, or for self-study by students seeking a deeper understanding than traditional courses and books offer--

**electromagnetism textbooks:** ELECTROMAGNETISM Volume I (Theory) ASHUTOSH PRAMANIK, 2014-01-01 This book [earlier titled as Electromagnetism: Theory and Applications which is bifurcated into two volumes: Electromagnetism: Theory and Electromagnetism: Applications (Magnetic Diffusion and Electromagnetic Waves) has been updated to cover some additional aspects of theory and nearly all modern applications. The semi-historical approach is unchanged, but further historical comments have been introduced at various places in the book to give a better insight into the development of the subject as well as to make the study more interesting and palatable to the students. Key Features • Physical explanations of different types of currents • Concepts of complex permittivity and complex permeability; and anisotropic behaviour of constitute parameters in different media and different conditions • Vector co-ordinate system transformation equations • Halbach magnets and the theory of one-sided flux • Discussion on physical aspects of demagnetization curve of B-H loop for ferromagnetic materials • Extrapolation of Frohlich-Kennelly equation used for the design and analysis of permanent magnet applications • Physical aspects of Faraday's law of electromagnetic induction (i.e., Fourth Maxwell's field equation) through the approach of special relativity • Extrapolation and elaboration of the concept of electromechanical energy conversion to both magnetic as well as electric field systems Appendices contain in-depth analysis of self-inductance and non-conservative fields (Appendix 6), proof regarding the boundary conditions (Appendix 8), theory of bicylindrical co-ordinate system to provide the physical basis of the circuit approach to the cylindrical transmission line systems (Appendix 10), and properties of useful functions like Bessel and Legendre functions (Appendix 9). The book is designed to serve as a core text for students of electrical engineering. Besides, it will be useful to postgraduate physics students as well as research engineers and design and development engineers in industries.

**electromagnetism textbooks:** *Essentials of Electromagnetics for Engineering* David A. de Wolf, 2001 *Essentials of Electromagnetics for Engineering*, first published in 2000, provides a clearly written introduction to the key physical and engineering principles of electromagnetics. Throughout the book, the author describes the intermediate steps in mathematical derivations that many other textbooks leave out. The author begins by examining Coulomb's law and simple electrostatics, covering in depth the concepts of fields and potentials. He then progresses to magnetostatics and Maxwell's equations. This approach leads naturally to a discussion of electrodynamics and the treatment of wave propagation, waveguides, transmission lines, and antennas. At each stage, the author stresses the physical principles underlying the mathematical results. Many homework exercises are provided, including several in Matlab and Mathematica formats. The book contains a separate chapter on numerical methods in electromagnetics, and a broad range of worked examples to illustrate important concepts. It is suitable as a textbook for undergraduate students of engineering and applied physics taking introductory courses in electromagnetics.



**electromagnetism textbooks: ELECTROMAGNETISM Volume 2 —Applications**

ASHUTOSH PRAMANIK, 2014-01-16 This book is a sequel to Electromagnetism: Theory (Volume I). It has been updated to cover some additional aspects of theory and nearly all modern applications. The semi-historical approach is unchanged, but further historical comments have been introduced at various places in the book to give a better insight into the development of the subject as well as to make the study more interesting and palatable to the students. • Emphasis on practical aspects of wave guidance and radiation • Sections on analysis of cylindrical dielectric waveguide (e.g. of optical fibres) in Chapters 18 and 22 • Tensor formulation of Maxwell's Stresses • Extension of Principle of Duality to time varying field problems as well as to non electrical systems • Extrapolation of the method of images from partially embedded conduction current elements to discontinuous current elements with displacement currents in antennae problems • Explanation of the physical basis of the mechanism of electromagnetic radiation • Analysis of wave polarization including complete and partial polarization • Effects of finite geometrical dimensions of the conducting media on the skin-effect phenomenon • Types of apertures in receiving antennae The book is designed to serve as a core text for students of electrical engineering. Besides, it will be useful to postgraduate physics students as well as research engineers and design and development engineers in industries.

**electromagnetism textbooks:** *Electromagnetism for Electronic Engineers* R. G. Carter, 1986

**electromagnetism textbooks: Advanced Classical Electromagnetism** Robert Wald, 2022-02-01 A modern approach to classical electromagnetism Electromagnetism is one of the pillars of modern physics. Robert Wald provides graduate students with a clear, concise, and mathematically precise introduction to the subject, covering all the core topics while bringing the teaching of electromagnetism up to date with our modern understanding of the subject. Electromagnetism is usually taught in a quasi-historical fashion, starting from concepts formulated in the eighteenth and nineteenth centuries, but this tends to promote outdated ways of thinking about the theory. Wald begins with Maxwell's equations—the foundation of electromagnetism—together with the formulas for the energy density, momentum density, and stress tensor of the electromagnetic field. He then proceeds through all the major topics in classical electromagnetism, such as electrostatics, dielectrics, magnetostatics, electrodynamics and radiation, diffraction, and special relativity. The last two chapters discuss electromagnetism as a gauge theory and the notion of a point charge—topics not normally treated in electromagnetism texts. Completely rethinks how to teach electromagnetism to first-year graduate students Presents electromagnetism from a modern, mathematically precise perspective, formulating key conceptual ideas and results clearly and concisely Written by a world-class physicist and proven in the classroom Covers all the subjects found in standard electromagnetism textbooks as well as additional topics such as the derivation of the initial value formulation for Maxwell's equations Also ideal as a supplementary text or for self-study

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**electromagnetism textbooks:** Classical Electromagnetism in a Nutshell Anupam Garg, 2012-04-08 A comprehensive, modern introduction to electromagnetism This graduate-level physics textbook provides a comprehensive treatment of the basic principles and phenomena of classical electromagnetism. While many electromagnetism texts use the subject to teach mathematical methods of physics, here the emphasis is on the physical ideas themselves. Anupam Garg distinguishes between electromagnetism in vacuum and that in material media, stressing that the core physical questions are different for each. In vacuum, the focus is on the fundamental content of

electromagnetic laws, symmetries, conservation laws, and the implications for phenomena such as radiation and light. In material media, the focus is on understanding the response of the media to imposed fields, the attendant constitutive relations, and the phenomena encountered in different types of media such as dielectrics, ferromagnets, and conductors. The text includes applications to many topical subjects, such as magnetic levitation, plasmas, laser beams, and synchrotrons.

Classical Electromagnetism in a Nutshell is ideal for a yearlong graduate course and features more than 300 problems, with solutions to many of the advanced ones. Key formulas are given in both SI and Gaussian units; the book includes a discussion of how to convert between them, making it accessible to adherents of both systems. Offers a complete treatment of classical electromagnetism Emphasizes physical ideas Separates the treatment of electromagnetism in vacuum and material media Presents key formulas in both SI and Gaussian units Covers applications to other areas of physics Includes more than 300 problems

**electromagnetism textbooks:** *Superconductivity and Electromagnetism* Teruo Matsushita, 2025-07-21 This end edition introduces to the characteristic features of electromagnetic phenomena in superconductors, demonstrating how these phenomena not only align with Maxwell's theory but also expand its scope. By presenting examples of peculiar magnetic behaviors, the book broadens the reader's understanding of electromagnetism and its implications in superconductivity. The book explores key concepts such as flux pinning, responsible for non-dissipative currents in DC systems and hysteretic irreversibility in AC systems. This irreversibility, akin to friction, arises from the instability in the motion of quantized magnetic flux lines. Additionally, the longitudinal magnetic field effect is examined, highlighting its role in advancing Maxwell's theory. Through these discussions, readers will gain insights into the dynamics of quantized magnetic flux lines and the critical current density, crucial for the practical application of superconductors. With numerous appendices to support the derivation of complex equations, this book is an essential resource for students and young scientists interested in applied superconductivity, particularly in power applications. It offers a comprehensive introduction to the electromagnetic phenomena in superconductors, from fundamental principles to advanced topics. Graduate students, researchers, and engineers in the electric utility industry will find this book invaluable for its detailed exploration of superconductivity and its applications. Researchers and practitioners in the field of superconductivity, as well as engineers working in the electric utility industry, will benefit from the insights provided in this book. It serves as a critical resource for understanding the electromagnetic phenomena in superconductors and their practical applications, making it a must-read for those seeking to deepen their knowledge in this area.

**electromagnetism textbooks:** *Advanced Electromagnetism* Terence William Barrett, Dale M. Grimes, 1995 *Advanced Electromagnetism: Foundations, Theory and Applications* treats what is conventionally called electromagnetism or Maxwell's theory within the context of gauge theory or Yang-Mills theory. A major theme of this book is that fields are not stand-alone entities but are defined by their boundary conditions. The book has practical relevance to efficient antenna design, the understanding of forces and stresses in high energy pulses, ring laser gyros, high speed computer logic elements, efficient transfer of power, parametric conversion, and many other devices and systems. Conventional electromagnetism is shown to be an underdeveloped, rather than a completely developed, field of endeavor, with major challenges in development still to be met.

**electromagnetism textbooks:** *Introduction to Electromagnetism* Martin J N Sibley, 2021-03-24 This edition aims to expand on the first edition and take the reader through to the wave equation on coaxial cable and free-space by using Maxwell's equations. The new chapters include time varying signals and fundamentals of Maxwell's equations. This book will introduce and discuss electromagnetic fields in an accessible manner. The author explains electroconductive fields and develops ideas relating to signal propagation and develops Maxwell's equations and applies them to propagation in a planar optical waveguide. The first of the new chapters introduces the idea of a travelling wave by considering the variation of voltage along a coaxial line. This concept will be used in the second new chapter which solves Maxwell's equations in free-space and then applies them to

a planar optical waveguide in the third new chapter. As this is an area that most students find difficult, it links back to the earlier chapters to aid understanding. This book is intended for first- and second-year electrical and electronic undergraduates and can also be used for undergraduates in mechanical engineering, computing and physics. The book includes examples and homework problems. Introduces and examines electrostatic fields in an accessible manner Explains electroconductive fields Develops ideas relating to signal propagation Examines Maxwell's equations and relates them to propagation in a planar optical waveguide Martin Sibley recently retired after 33 years of teaching at the University of Huddersfield. He has a PhD from Huddersfield Polytechnic in Preamplifier Design for Optical Receivers. He started his career in academia in 1986 having spent 3 years as a postgraduate student and then 2 years as a British Telecom-funded research fellow. His research work had a strong bias to the practical implementation of research, and he taught electromagnetism and communications at all levels since 1986. Dr. Sibley finished his academic career as a Reader in Communications, School of Computing and Engineering, University of Huddersfield. He has authored five books and published over 80 research papers.

**electromagnetism textbooks: Electromagnetics** Edward J. Rothwell, Michael J. Cloud, 2008-10-28 Providing an ideal transition from introductory to advanced concepts, *Electromagnetics*, Second Edition builds a foundation that allows electrical engineers to confidently proceed with the development of advanced EM studies, research, and applications. This second edition of a popular text continues to offer coverage that spans the entire field, from electrostatics to the integral solutions of Maxwell's equations. The book provides a firm grounding in the fundamental concepts of electromagnetics and bolsters understanding through the use of classic examples in shielding, transmission lines, waveguides, propagation through various media, radiation, antennas, and scattering. Mathematical appendices present helpful background information in the areas of Fourier transforms, dyadics, and boundary value problems. The second edition adds a new and extensive chapter on integral equation methods with applications to guided waves, antennas, and scattering. Utilizing the engaging style that made the first edition so appealing, this second edition continues to emphasize the most enduring and research-critical electromagnetic principles.

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**electromagnetism textbooks: Molecular Electromagnetism: A Computational Chemistry**

*Approach* Stephan P. A. Sauer, 2011-08-25 This is a textbook on the theory and calculation of molecular electromagnetic and spectroscopic properties designed for a one-semester course with lectures and exercise classes. The idea of the book is to provide thorough background knowledge for the calculation of electromagnetic and spectroscopic properties of molecules with modern quantum chemical software packages. The book covers the derivation of the molecular Hamiltonian in the presence of electromagnetic fields, and of time-independent and time-dependent perturbation theory in the form of response theory. It defines many molecular properties and spectral parameters and gives an introduction to modern computational chemistry methods.

**electromagnetism textbooks: Electromagnetic Field Theory** Uday A. Bakshi, Late Ajay V. Bakshi, 2020-11-01 The comprehensive study of electric, magnetic and combined fields is nothing but electromagnetic engineering. Along with electronics, electromagnetics plays an important role in other branches. The book is structured to cover the key aspects of the course Electromagnetic Field Theory for undergraduate students. The knowledge of vector analysis is the base of electromagnetic engineering. Hence book starts with the discussion of vector analysis. Then it introduces the basic concepts of electrostatics such as Coulomb's law, electric field intensity due to various charge distributions, electric flux, electric flux density, Gauss's law, divergence and divergence theorem. The book continues to explain the concept of elementary work done, conservative property, electric potential and potential difference and the energy in the electrostatic fields. The detailed discussion of current density, continuity equation, boundary conditions and various types of capacitors is also included in the book. The book provides the discussion of Poisson's and Laplace's equations and their use in variety of practical applications. The chapter on magnetostatics incorporates the explanation of Biot-Savart's law, Ampere's circuital law and its applications, concept of curl, Stoke's theorem, scalar and vector magnetic potentials. The book also includes the concept of force on a moving charge, force on differential current element and magnetic boundary conditions. The book covers all the details of Faraday's laws, time varying fields, Maxwell's equations and Poynting theorem. Finally, the book provides the detailed study of uniform plane waves including their propagation in free space, perfect dielectrics, lossy dielectrics and good conductors. 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. The variety of solved examples is the feature of this book which helps to inculcate the knowledge of the electromagnetics in the students. Each chapter is well supported with necessary illustrations and self-explanatory diagrams. The book explains the philosophy of the subject which makes the understanding of the concepts very clear and makes the subject more interesting.

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