

Engineering Materials Rangwala

This well-known text-book now in its Nineteenth Edition, provides an up-to-date account of the basic principles on various functions and working of Railways. Its excellent material fills a significant void in the literature of Railway Engineering.

Explaining principles underlying the main micromachining practices currently being used and developed in industrial countries around the world, Micromachining of Engineering Materials outlines advances in material removal that have led to micromachining, discusses procedures for precise measurement, includes molecular-level theories, describes vapo

Civil Engineering Materials: Introduction and Laboratory Testing discusses the properties, characterization procedures, and analysis techniques of primary civil engineering materials. It presents the latest design considerations and uses of engineering materials as well as theories for fully understanding them through numerous worked mathematical examples. The book also includes important laboratory tests which are clearly described in a step-by-step manner and further illustrated by high-quality figures. Also, analysis equations and their applications are presented with appropriate examples and relevant practice problems, including Fundamentals of Engineering (FE) styled questions as well those found on the American Concrete Institute (ACI) Concrete Field Testing Technician - Grade I certification exam.

Features: Includes numerous worked examples to illustrate the theories presented Presents Fundamentals of Engineering (FE) examination sample questions in each chapter Reviews the ACI Concrete Field Testing Technician - Grade I certification exam Utilizes the latest laboratory testing standards and practices Includes additional resources for instructors teaching related courses This book is intended for students in civil engineering, construction engineering, civil engineering technology, construction management engineering technology, and construction management programs.

This text-book concisely formulates the basic principles of the subject matter in simple language presented in two sections. The Section I - Harbour and Dock Engineering, is well-divided in twelve chapters including chapter on 'Planning and Layout of Ports'. Also the approach of the write-up has been changed according to the form of facilities and requirements of Harbours and Ports. The Section II - Tunnel Engineering, is also well-divided in twelve chapters including newly developed methods like New Austrian Tunnelling Method (NATM), Shield methods and chapters on 'Stages in Tunnel Construction', 'Tunnelling in Water Bearing Soils' and also 'Health Protection in Tunnels' have been incorporated.

A unique book for Architect, Builder, Building Surveyor, Civil, Structural, Degree, Diploma, AMIE, UPSC and Other Examinations
CONTENTS
Introduction * Foundations * Deep Foundations * Structural Design of Foundations * Damp Proofing and Water Proofing * Cavity Walls * Shoring, Underpiling and Scaffolding * Masonry * Stone Masonry * H Brick Masonry * Composite Masonry * Partition Walls * Ground Floors * Stairs * Upper Floors * Lintels and Arches * Carpentry Joints * Doors and Windows * Roofs and Roofs Covering * Structural Steel Work * Plastering, Painting and White/Colour Washing * Paints, Varnishes and Distempers * Plain and Reinforced Cement Concrete * Form Work * Provisions of Joints in Structures * Fire Protection * Antitermite Treatment * New Concretes * H Acoustics and Sound Insulation * Water Supply and Sanitary Engg. * Specifications for Low Cost Buildings * Causes and Prevention of Cracks in Buildings * Preliminary Estimates for Buildings/Projects * Project Management Through PERT/CPM * H Planning of Buildings * Appendix * Index.

Building Construction Materials and Techniques follows a unique approach to the subject by including both materials and construction techniques in a combined text as per the latest trends in university curriculums. It also caters to the needs of the universities where these subjects are offered across two semesters as well. Of the 32 chapters in this book, 13 are dedicated to building construction materials while the remaining 19 focus on conventional as well as modern techniques in construction. The chapters are supplemented by a plethora of self-explanatory illustrations for easy comprehension. Relevant references to IS codes and standards make this text ideal for extended learning.

?ABOUT THE BOOK: feel proud in issuing the Seventh Edition of the book "Building Construction and Materials". The subject " Building Construction and Materials" is a very vast and tedious subject of Civil Engineering. Author has tried to explain all the aspects of this subject in a very simple and lucid language. The Book is entirely in SI Units. The book covers the syllabi prescribed by all the Indian universities, State Technical Boards and A.M.I.E. (India) examinations. The book is also very useful for Engineers involved in construction industry. All the relevant I.S.I. Recommendations and other useful data have been incorporated in the book. Author has tried to explain all the aspects with the help of lot of neat drawings. It is hoped that the book will satisfy all the needs of the students and practising engineers in regard to this subject. In order to increase the usefulness of the book basic engineering materials have been added in this revised 17th edition. Basic engineering material like stone, bricks, lime, cement, timber and iron has been added in this edition. ?RECOMMENDATIONS: A textbook for all Engineering Branches, Competitive Examination, ICS, and AMIE Examinations In S.I Units For Degree, Diploma and A.I.M.E. (India) Students and Practising Civil Engineers. ?ABOUT THE AUTHOR: Dr. Gurcharan Singh Joint Director (Retd.) Directorate of Technical Education Rajasthan, Jodhpur ?BOOK DETAILS: ISBN : 978-81-89401-21-4 Pages: 933 + 26 Edition: 17th, Year-2019 Size(cms): L-23.7, B-15.8, H-3.7 ?For more Offers visit our Website: www.standardbookhouse.com

The book aims at presenting the topics of Bridge Engineering expressed in simple and lucid language. The presentation is comprehensive and methodical as well as interesting and easy to follow.

This well-known text-book provides an up-to-date account of the basic knowledge of all types of Building Materials or Materials of Construction. Topics of material science are also incorporated to improve the utility of the book. It is characterised by the clear, methodical and also step-by-step treatment of the subject. The presentation is comprehensive and easy-to-follow.

Milton Ohring's Engineering Materials Science integrates the scientific nature and modern applications of all classes of engineering materials. This comprehensive, introductory textbook will provide undergraduate engineering students with the fundamental background needed to understand the science of structure-property relationships, as well as address the engineering concerns of materials selection in design, processing materials into useful products, and how material degrade and fail in service. Specific topics include: physical and electronic structure; thermodynamics and kinetics; processing; mechanical, electrical, magnetic, and optical properties; degradation; and failure and reliability. The book offers superior coverage of electrical, optical, and magnetic materials than competing text. The author has taught introductory courses in material science and engineering both in academia and industry (AT&T Bell Laboratories) and has also written the well-received book, The Material Science of Thin Films (Academic Press).

Building Materials and Construction covers the detailed discussion on materials required for building construction along with construction methodology and will be useful for students and teachers as well as for architects and practicing civil engineers. The book will cater to their needs at every stage, i.e., from initial planning to selection of construction materials, construction practices, and even the post-construction stage. Apart from covering the traditional materials and construction details, the book also contains many latest and contemporary topics including newer and advanced materials such as composites, geosynthetics, recycled aggregate, paper as building material, bacterial concrete, nano concrete, geopolymer concrete and more. Salient Features : - Covers both building materials and construction practices in one volume. - Extensive coverage of traditional and modern building materials and construction practices. - Excellent pedagogy: • Figures: 227 • Tables: 117 • Review Questions: 449 • Multiple-Choice Questions: 250.

The book has been thoroughly revised. Several new articles have been added, specifically, in chapters in mortar, Concrete, Paint: Varnishes, Distempers and Antitermite treatment to make the book to still more comprehensive and a useful unit for the students preparing for the examination in the subject.

Building Technology involves selecting suitable materials and carrying out building construction neatly. This book comprehensively covers all aspects of the subject and is written as per the requirements of civil engineering diploma students of West Bengal. The text is presented in simple, precise and reader-friendly language. It is amply supported by figures and tables. KEY FEATURES • Detailed coverage of Kerala University syllabus • Simple and precise explanations • Text sufficiently illustrated by figures and tables • Relevant IS Codes listed • Exhaustive questions given

Engineering Materials (Material Science).Engineering Materials [Material Science]

Insufficient knowledge, time limitations, and budget constraints often result in poor material selection and implementation, which can lead to uncertain performance and premature failure of mechanical and electro-mechanical products. Selection of Engineering Materials and Adhesives is a professional guide to choosing the most appropriate materials and adhesives for product development applications from the onset. This text emphasizes material properties and classifications, fabrication and processing considerations, performance objectives, and selection based on specific application requirements, such as frequency of use (duty cycle) and operating environment. Each chapter focuses on a particular material family, covering ferrous and non-ferrous metals, including steels, cast-iron, aluminum, and titanium, as well as plastics such as PVC, acrylics, and nylons. Unique to this book on material selection, the final chapter discusses critical aspects of adhesives, including cure methods and joint configurations. Selection of Engineering Materials and Adhesives presents materials that are most often used for selection processes and applications in product development. This book is an ideal text for senior level undergraduate or graduate courses in mechanical engineering and materials science as well as recent graduates or managers who are tasked with the daunting job of selecting a material for a new application or justifying a long-used material in a specific application. It embodies the author's own experience and lectures on this subject, taught at UCLA Extension, and provides students as well as practicing engineers the tools to systematically select the most appropriate materials and adhesives for their design work.

The construction of buildings and structures relies on having a thorough understanding of building materials. Without this knowledge it would not be possible to build safe, efficient and long-lasting buildings, structures and dwellings. Building materials in civil engineering provides an overview of the complete range of building materials available to civil engineers and all those involved in the building and construction industries. The book begins with an introductory chapter describing the basic properties of building materials. Further chapters cover the basic properties of building materials, air hardening cement materials, cement, concrete, building mortar, wall and roof materials, construction steel, wood, waterproof materials, building plastics, heat-insulating materials and sound-absorbing materials and finishing materials. Each chapter includes a series of questions, allowing readers to test the knowledge they have gained. A detailed appendix gives information on the testing of building materials. With its distinguished editor and eminent editorial committee, Building materials in civil engineering is a standard introductory reference book on the complete range of building materials. It is aimed at students of civil engineering, construction engineering and allied courses including water supply and drainage engineering. It also serves as a source of essential background information for engineers and professionals in the civil engineering and construction sector. Provides an overview of the complete range of building materials available to civil engineers and all those involved in the building and construction industries Explores the basic properties of building materials featuring air hardening cement materials, wall and roof materials and sound-absorbing materials Each chapter includes a series of questions, allowing readers to test the knowledge they have gained

This practice-oriented book, now in its second edition, presents a lucid yet comprehensive coverage of the engineering properties and uses of the materials commonly used in building construction in India. Profusely illustrated with tables and diagrams, the book brings into light the basics of building materials and their specifications. Besides giving information regarding the traditional building materials, the text now acquaints the reader with up-to-date and in-depth information pertaining to modern materials available in the market. The references to IS codes and standards make this text suitable for further study and field use. The second edition possesses some substantial changes in Chapters 12, 13, 14 and 20. Now, the book offers a new section on durability of concrete in Chapter 12; a modified section regarding revision of IS 10262 (1982) code on concrete mix design to IS 10262 (2009) and a new section on classification of exposure conditions in Chapter 13; and a new section relating to large advances made in concrete construction and repair chemicals in Chapter 14. Besides, the content of Chapter 20 has been completely updated, with a particular emphasis on the extensive use of aluminium in building construction. Primarily intended for the students pursuing undergraduate degree (B.E./B.Tech.) and diploma courses in civil engineering and architecture, the book, on account of lecture-based presentation of the subject, should also prove eminently utilitarian for the young teachers to use it in their classroom lectures as well as for practising engineers to get a clear understanding of the fundamentals of the subject. NEW TO THE SECOND EDITION Review questions at the end of each chapter enable the reader to recapitulate the topics Considerable attention is given on field practice Syllabus of laboratory work on construction materials and a model question paper (Anna University) are given in appendices to guide the reader.

Basic Civil Engineering is designed to enrich the preliminary conceptual knowledge about civil engineering to the students of non-civil branches of engineering. The coverage includes materials for construction, building construction, basic surveying and other major topics like environmental engineering, geo-technical engineering, transport traffic and urban engineering, irrigation & water supply engineering and CAD.

Building Materials and Construction is primarily written for the students of Civil Engineering to make them familiar with building materials and construction practices to build their interest in the field. The book starts with explanation of building material concepts and goes on to explain all the important materials like Lime, Bricks, Cement, Timber, Concrete etc. in separate chapters following the same flow as prescribed in major universities. Special emphasis is given on construction materials such as foundation work, stone and brick masonry, plastering work, door and window design, roof and floors, DPC etc.

Ideal for students on all construction courses Topics presented concisely in plain language and with clear drawings Updated to include revisions to Building and Construction regulations The Building Construction Handbook is THE authoritative reference for all construction students and professionals. Its detailed drawings clearly illustrate the construction of building elements, and have been an invaluable guide for builders since 1988. The principles and processes of construction are explained with the concepts of design included where appropriate. Extensive coverage of building construction practice, techniques, and regulations representing both traditional procedures and modern developments are included to provide the most comprehensive and easy to understand guide to building construction. This new edition has been updated to reflect recent changes to the building regulations, as well as new material on the latest technologies used in domestic construction. Building Construction Handbook is the essential, easy-to-use resource for undergraduate and vocational students on a wide range of courses including NVQ and BTEC National, through to Higher National Certificate and Diploma, to Foundation and three-year Degree level. It is also a useful practical reference for building designers, contractors and others engaged in the construction industry.

Building Materials is a textbook designed for undergraduate civil engineering students who are offered courses on Building and Construction Materials. The book primarily covers the AICTE syllabus on Materials, Testing, and Evaluation. It provides detailed and up-to-date information on various building and construction materials, including green materials. The book discusses the usual building materials like stones, bricks, lime, cement, aggregates, mortars, concrete and special concretes, wood, ferrous materials, steel, plastics, non-ferrous materials, glass, ceramic materials, plastics, paints, etc. Wherever necessary, the substitute materials and the greenness of the material are identified and explained. The book provides a thorough discussion of various materials using appropriate illustrations, real-life photographs, examples, and case studies for better understanding.

This well-known and comprehensive text-book, now in its Twenty-Fifth Edition presents in lucid language the complete and full details of the various complicated topics on the subject of Building Construction. The entire subject-matter of this acclaimed book has been split up in two parts: * Elementary Building Construction * Advanced Building Construction. It is characterised by the clear, methodical and also step-by-step treatment of the subject, and written in a highly readable style. The SI units have been used throughout the book.

The construction sector alone accounts for 40 percent of resource consumption and environmental pollution. In line with the current considerations on environmental sustainability, particular attention is paid to eco-sustainable building materials such as timber. Timber is able to perform both load-bearing and comfort constructive functions. It is also a natural, renewable and recyclable material. However, its use as an engineering material calls for constant development and research. This book provides insight into the spread of the use of timber in the construction industry, presenting some thoughts on important aspects related to production, design and responsible use.

Featuring in-depth discussions on tensile and compressive properties, shear properties, strength, hardness, environmental effects, and creep crack growth, "Mechanical Properties of Engineered Materials" considers computation of principal stresses and strains, mechanical testing, plasticity in ceramics, metals, intermetallics, and polymers, materials selection for thermal shock resistance, the analysis of failure mechanisms such as fatigue, fracture, and creep, and fatigue life prediction. It is a top-shelf reference for professionals and students in materials, chemical, mechanical, corrosion, industrial, civil, and maintenance engineering; and surface chemistry.

Everything needed for a course in Estimating is provided in this proven text, which combines coverage of principles with step-by-step procedures. Ideal for construction, architecture, and engineering students, it reflects the popular approach of tracing a complete project's progress. The use of computers as a key estimating tool is incorporated throughout.

First Published in 1999: The Bridge Engineering Handbook is a unique, comprehensive, and state-of-the-art reference work and resource book covering the major areas of bridge engineering with the theme "bridge to the 21st century."

This Volume Is One Of The Two Which Offer A Comprehensive Course In Those Parts Of Theory And Practice Of Plane And Geodetic Surveying That Are Most Commonly Used By Civil Engineers. The First Volume Covers In 24 Chapters, The Most Common Surveying Operations. Each Topic Introduced Is Thoroughly Described, The Theory Is Rigorously Developed, And A Large Number Of Numerical Examples Are Included To Illustrate Its Application. General Statements Of Important Principles And Methods Are Almost Invariably Given By Practical Illustration. Apart From Illustrations Of Old And Conventional Instruments, Emphasis Has Been Placed On New Or Modern Instruments, Both For Ordinary As Well As Precise Work. A Good Deal Of Space Has Been Given To Instrumental Adjustments With Thorough Discussion Of Geometrical Principles In Each Case. Many New Advanced Problems Have Also Been Added Which Will Prove Useful For Competitive Examinations.

This text on building materials includes discussion of structural clay products, rocks and stones, wood, materials for making concrete, ferrous and non-ferrous metals, and miscellaneous materials.

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