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Engineering Mathematics-II: For GTU Engineering Mathematics Iii (For Gtu) Engineering Mathematics III. Modern Mathematics Education for Engineering Curricula in Europe Mathematics - I For the first year Gujarat Technological University (GTU) Elementary Differential Equations and Boundary Value Problems Calculus Engineering Mathematics-II Complex Variables and Partial Differential Equations: For the Gujarat Technological University (GTU) Engineering Mathematics Fourier Series and Boundary Value Problems Advanced Engineering Mathematics Advanced Engineering Mathematics Introduction to Engineering Mathematics - Volume II [APJAKTU Lucknow] Physics (Group 1) Advanced Engineering Mathematics Engineering Graphics for the First Year Student (GTU) Thomas' Calculus Electrical Machines - I Introduction to Linear Algebra with Applications Engineering Mathematics (according to U. P. Technical University Syllabus) Modern Engineering Mathematics Engineering Mathematics-I NEURAL NETWORKS, FUZZY LOGIC AND GENETIC ALGORITHM Introduction to Engineering Mathematics - Volume IV [APJAKTU] Introduction to Engineering Mathematics-I: for the students of (RGPV), Bhopal Basic Electrical Engineering Engineering Mathematics DC Machines and Transformers (For GTU) Port and Harbour Engineering Engineering Mathematics II Mathematics for Electrical Engineering and Computing Numerical Methods for Chemical Engineering Environmental Science Data & File Structures Using C (gtu) A Textbook Of Engineering Mathematics-I : (As Per The New Syllabus, B.Tech. I Year Of U.P. Technical University) Basic Civil Engineering Engineering Mathematics-II Engineering Mathematics Volume II A Textbook of Discrete Mathematics, 9th Edition

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 has received very good response from students and teachers within the country and abroad alike. Its previous edition exhausted in a very short time. I place on record my sense of gratitude to the students and teachers for their appreciation of my work, which has offered me an opportunity to bring out this revised Eighteenth Edition. Due to the demand of students a chapter on Linear Programming as added. A large number of new examples and problems selected from the latest question papers of various engineering examinations held recently have been included to enable the students to understand the latest trend. Conceptualized specifically for Rajiv Gandhi Pradyogiki Vishwavidyalaya (RGPV), Bhopal, "Introduction to Engineering Mathematics - Volume I" covers important topics such as Mean Value Theorems, Maclaurin and Taylor Series, Partial Differentiation, Beta, Gamma Functions and Properties, Double Integrals, Area and Volume by Double integration, Triple Integration and Applications, Convergence of Sequence and Series, Fourier Series, Vector Spaces and Sub Spaces, Liner Transformations, Rank of Matrix, and Eigen Values and Eigen Vectors for sound conceptual understanding for students. Mathematics - I has been written specifically for the first year Gujarat Technological University (GTU) syllabus and students of all programs of engineering since first semester mathematics is common to all branches. It covers Indeterminate Forms, Gamma and Beta Functions, Applications of Definite Integrals, Sequences and Series, Taylor's and Maclaurin's Series, Fourier Series, Partial Derivatives, Multiple Integrals, and Matrices for the benefit of the students. Suitable for a first year course in the subject, this book is an introduction to the field of engineering mathematics. The book is accompanied by online bridging chapters - refresher units in core subjects to bring students up to speed with what they'll need to know before taking the engineering mathematics course. This book highlights the latest advances in engineering mathematics with a main focus on the mathematical models, structures, concepts, problems and computational methods and algorithms most relevant for applications in modern technologies and engineering. It addresses mathematical methods of algebra, applied matrix analysis, operator analysis, probability theory and stochastic processes, geometry and computational methods in network analysis, data classification, ranking and optimisation. The individual chapters cover both theory and applications, and include a wealth of figures, schemes, algorithms, tables and results of data analysis and simulation. Presenting new methods and results, reviews of cutting-edge research, and open problems for future research, they equip readers to develop new mathematical methods and concepts of their own, and to further compare and analyse the methods and results discussed. The book consists of contributed chapters covering research developed as a result of a focused international seminar series on mathematics and applied mathematics and a series of three focused international research workshops on engineering mathematics organised by the Research Environment in Mathematics and Applied Mathematics at Mälardalen University from autumn 2014 to autumn 2015: the International Workshop on Engineering Mathematics for Electromagnetics and Health Technology; the International Workshop on Engineering Mathematics, Algebra, Analysis and Electromagnetics; and the 1st Swedish-Estonian International Workshop on Engineering Mathematics, Algebra, Analysis and Applications. It serves as a source of inspiration for a broad spectrum of researchers and research students in applied mathematics, as well as in the areas of applications of mathematics considered in the book. This book provides

comprehensive introduction to a consortium of technologies underlying soft computing, an evolving branch of computational intelligence. The constituent technologies discussed comprise neural networks, fuzzy logic, genetic algorithms, and a number of hybrid systems which include classes such as neuro-fuzzy, fuzzy-genetic, and neuro-genetic systems. The hybridization of the technologies is demonstrated on architectures such as Fuzzy-Back-propagation Networks (NN-FL), Simplified Fuzzy ARTMAP (NN-FL), and Fuzzy Associative Memories. The book also gives an exhaustive discussion of FL-GA hybridization. Every architecture has been discussed in detail through illustrative examples and applications. The algorithms have been presented in pseudo-code with a step-by-step illustration of the same in problems. The applications, demonstrative of the potential of the architectures, have been chosen from diverse disciplines of science and engineering. This book with a wealth of information that is clearly presented and illustrated by many examples and applications is designed for use as a text for courses in soft computing at both the senior undergraduate and first-year post-graduate engineering levels. It should also be of interest to researchers and technologists desirous of applying soft computing technologies to their respective fields of work. Mathematics for Electrical Engineering and Computing embraces many applications of modern mathematics, such as Boolean Algebra and Sets and Functions, and also teaches both discrete and continuous systems - particularly vital for Digital Signal Processing (DSP). In addition, as most modern engineers are required to study software, material suitable for Software Engineering - set theory, predicate and propositional calculus, language and graph theory - is fully integrated into the book. Excessive technical detail and language are avoided, recognising that the real requirement for practising engineers is the need to understand the applications of mathematics in everyday engineering contexts. Emphasis is given to an appreciation of the fundamental concepts behind the mathematics, for problem solving and undertaking critical analysis of results, whether using a calculator or a computer. The text is backed up by numerous exercises and worked examples throughout, firmly rooted in engineering practice, ensuring that all mathematical theory introduced is directly relevant to real-world engineering. The book includes introductions to advanced topics such as Fourier analysis, vector calculus and random processes, also making this a suitable introductory text for second year undergraduates of electrical, electronic and computer engineering, undertaking engineering mathematics courses. Dr Attenborough is a former Senior Lecturer in the School of Electrical, Electronic and Information Engineering at South Bank University. She is currently Technical Director of The Webbery - Internet development company, Co. Donegal, Ireland.

Fundamental principles of mathematics introduced and applied in engineering practice, reinforced through over 300 examples directly relevant to real-world engineering. During the 19th century, the engineering of ports and harbours became a large and specialised branch of the profession. This development began in ports in physically difficult locations and may be particularly identified with the growth of the Port of Liverpool. Stimulated by the arrival of ever-larger steamships and the heavy investment in port facilities that they demanded, it spread around much of the world. The opening papers give examples of what could be achieved in antiquity; the following ones set out the advances in design and technology from 1700 to the start of this century - and note some of the failures and recurrent problems. They also illustrate the critical importance of political and economic factors in determining what the engineers achieved. S. Chand's Physics, designed to serve as a textbook for students pursuing their engineering degree course, B.E. in Gujarat Technical University. The book is written with the singular objective of providing the students of GTU with a distinct source material as per the syllabus. The philosophy of presentation of the material in the book is based upon decades of classroom interaction of the authors. In each chapter, the fundamental concepts pertinent to the topic are highlighted and the in-between continuity is emphasized. Throughout the book attention is given to the proper presentation of concepts and practical applications are cited to highlight the engineering aspects. A number of problems are solved. New problems are included in order to expedite the learning process of students of all hues and to improve their academic performance. The fundamental concepts are emphasized in each chapter and the details are developed in an easy-to-follow style. Each chapter is divided into smaller parts and sub-headings are provided to make the reading a pleasant journey from one interesting topic to another important topic. Over the last few decades, linear algebra has become more relevant than ever. Applications have increased not only in quantity but also in diversity, with linear systems being used to solve problems in chemistry, engineering, economics, nutrition, urban planning, and more. DeFranza and Gagliardi introduce students to the topic in a clear, engaging, and easy-to-follow manner. Topics are developed fully before moving on to the next through a series of natural connections. The result is a solid introduction to linear algebra for undergraduates' first course. Engineering Graphics, in its 13th year, has been succinctly revised for the Engineering students of 1st year of Gujarat Technological University, Ahmedabad. Beginning with the units, dimensions and standard, this book discusses the measurement and measurement errors. Then, it goes on to discuss electronics equipment, measurements of low resistance and A.C. bridges. Moreover, the book deals with the cathode ray oscilloscopes. Further, it describes various instrument calibration. Finally, the book deals with recorders and plotters. This textbook provides an introduction to some fundamental concepts in Discrete Mathematics and the important role this subject plays in computer science. Every topic in this book has been started with necessary introduction and developed gradually up to the standard form. The book lays emphasis on the applicability of Mathematical structures to computer science. The content of this book is well supported with numerous solved examples with detailed explanation. This revision of the market-leading book maintains its classic strengths: contemporary approach, flexible chapter construction, clear exposition, and outstanding problems. Like its predecessors, this revision is written from the viewpoint of the applied mathematician, focusing both on the theory and the practical applications of Differential Equations as they apply to engineering and the sciences. Sound and Accurate Exposition of Theory--special attention is made to methods of solution, analysis, and approximation. Use of technology, illustrations, and problem sets help readers develop an intuitive understanding of the material. Historical footnotes trace development of the discipline and identify outstanding individual contributions. This book comprises of five units which covers the entire syllabus. Topics like principles of

environmental science, environmental pollution, social issues like acid rain, global warming, etc are included. New developments like Green buildings and smart cities are also included. This book has been written in a simple and lucid manner. Most of these topics are traditionally taught in environmental science and engineering in several universities and institutes. Hence this book will be useful for other universities as well. Figures and tables are incorporated wherever necessary to make the concept clearer. This book also contains short questions with answers and review questions. Case studies on various environmental issues have been included. Author hopes that this book will be useful for both students and faculty alike.

Applications of numerical mathematics and scientific computing to chemical engineering.

About the Book: This book Engineering Mathematics-II is designed as a self-contained, comprehensive classroom text for the second semester B.E. Classes of Visveswaraiah Technological University as per the Revised new Syllabus. The topics included are Differential Calculus, Integral Calculus and Vector Integration, Differential Equations and Laplace Transforms. The book is written in a simple way and is accompanied with explanatory figures. All this make the students enjoy the subject while they learn. Inclusion of selected exercises and problems make the book educational in nature. It should. Introduction to Engineering Mathematics Volume-II has been thoroughly revised according to the New Syllabi (2018 onwards) of Dr. A.P.J. Abdul Kalam Technical University (AKTU, Lucknow). The book contains 15 chapters divided among five modules - Ordinary Differential Equations of Higher Order, Multivariable Calculus-II, Sequence and Series, Complex Variable Differentiation and Complex Variable-Integration. It contains numerous solved examples from question papers of examinations recently held by different universities and engineering colleges so that the students may not find any difficulty while answering these problems in their final examination. This book has been written for the students of third semester of electrical engineering of Gujarat Technological University (GTU). It would also be useful for the students of third semester of power electronics branch. The book provides comprehensive knowledge of the DC machines and transformers and has an extended summary in the form of 'Key points to remember', and a large number of solved and unsolved problems. In the exercise, the questions have been presented in accordance with the GTU examination pattern.

Key Features

- Strictly as per the GTU syllabus
- Over 125 descriptive questions
- Examinations oriented approach
- Includes questions of the last five years of GTU examinations

The importance of various electrical machines is well known in the various engineering fields. The book provides comprehensive coverage of the magnetic circuits, magnetic materials, single and three phase transformers and d.c. machines. The book is structured to cover the key aspects of the course Electrical Machines - I. The book starts with the explanation of basics of magnetic circuits, concepts of self and mutual inductances and important magnetic materials. Then it explains the fundamentals of single phase transformers including the construction, phasor diagram, equivalent circuit, losses, efficiency, methods of cooling, parallel operation and autotransformer. The chapter on three phase transformer provides the detailed discussion of construction, connections, phasor groups, parallel operation, tap changing transformer and three winding transformer. The various testing methods of transformers are also incorporated in the book. The book further explains the concept of electromechanical energy conversion including the discussion of singly and multiple excited systems. Then the book covers all the details of d.c. generators including construction, armature reaction, commutation, characteristics, parallel operation and applications. The book also includes the details of d.c. motors such as characteristics, types of starters, speed control methods, electric braking and permanent magnet d.c. motors. Finally, the book covers the various testing methods of d.c. machines including Swinburne's test, brake test, retardation test and Hopkinson's test. 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. Each chapter is well supported with necessary illustrations, self-explanatory diagrams and variety of solved problems. All the chapters are arranged in a proper sequence that permits each topic to build upon earlier studies. The book explains the philosophy of the subject which makes the understanding of the concepts very clear and makes the subject more interesting.

Engineering Mathematics-I "Part I deals with the applications of differential calculus and partial differentiation, vector calculus and infinite series. Part II provides discussion on the concepts of vector spaces, homogeneous system of equations, Cramer's rule, orthogonality and orthonormal bases, and eigenvalues of a linear operator."--Cover.

Introduction to Engineering Mathematics - Volume IV has been thoroughly revised according to the New Syllabi (2018 onwards) of Dr. A.P.J. Abdul Kalam Technical University (AKTU, Lucknow). The book contains 13 chapters divided among five modules - Partial Differential Equations, Applications of Partial Differential Equations, Statistical Techniques - I, Statistical Techniques - II and Statistical Techniques - III. Engineering Mathematics III is designed as per the specific requirements of the third-semester paper offered to all the branches in the BE syllabus of Gujarat Technological University (GTU). With an emphasis on problem-solving techniques, engineering applications, as well as detailed explanations of the mathematical concepts, this book will give the students a complete grasp of the mathematical skills that are needed by engineers. The focus on practice rather than theory ensures complete mastery over the topics covered in the semester. Appropriate for one- or two-semester Advanced Engineering Mathematics courses in departments of Mathematics and Engineering. This clear, pedagogically rich book develops a strong understanding of the mathematical principles and practices that today's engineers and scientists need to know. Equally effective as either a textbook or reference manual, it approaches mathematical concepts from a practical-use perspective making physical applications more vivid and substantial. Its comprehensive instructional framework supports a conversational, down-to-earth narrative style offering easy accessibility and frequent opportunities for application and reinforcement. This book is open access under a CC BY License. It provides a comprehensive overview of the core subjects comprising mathematical curricula for engineering studies in five European countries and identifies differences between two strong traditions of teaching mathematics to engineers. The collective work of experts from a dozen universities critically examines various aspects of higher mathematical education. The two EU Tempus-IV projects – MetaMath and MathGeAr –

investigate the current methodologies of mathematics education for technical and engineering disciplines. The projects aim to improve the existing mathematics curricula in Russian, Georgian and Armenian universities by introducing modern technology-enhanced learning (TEL) methods and tools, as well as by shifting the focus of engineering mathematics education from a purely theoretical tradition to a more applied paradigm. MetaMath and MathGeAr have brought together mathematics educators, TEL specialists and experts in education quality assurance from 21 organizations across six countries. The results of a comprehensive comparative analysis of the entire spectrum of mathematics courses in the EU, Russia, Georgia and Armenia has been conducted, have allowed the consortium to pinpoint and introduce several modifications to their curricula while preserving the generally strong state of university mathematics education in these countries. The book presents the methodology, procedure and results of this analysis. This book is a valuable resource for teachers, especially those teaching mathematics, and curriculum planners for engineers, as well as for a general audience interested in scientific and technical higher education. This book has been designed specifically for the Gujarat Technological University (GTU) syllabus and for the students of engineering in their Third Semester. Eight dedicated chapters are set to sequentially cover each module of the syllabus and are compounded by the 'tutorial technique', i.e., theory followed by example(s) so that the learner develops an increased sense of conscious intellection. This exceptional mix of theory and application caters to all types of requirements, be it the student or the teacher. Not only is the syllabus rigorously followed, but each topic has also been treated with the end-examination in sight. Concepts are well-aided with solved examples (of different complexities) so that every learner understands the topic at hand.

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