5th Semester Mechanical Engineering Syllabus

Machine DesignBasic And Applied Thermodynamics 2/ETextbook of Environmental Studies for Undergraduate CoursesCNC MachinesBasics of Laser PhysicsPrinciples of ManagementENERGY ENGINEERING AND MANAGEMENTThe King's GrammarEngineering Metrology and MeasurementsDesign Data HandbookEducation and Training in Geo-Engineering SciencesDesign of Machine ElementsBrownian Motion, Martingales, and Stochastic CalculusFundamental Concept in Environmental StudiesAn Introduction to Energy ConversionManagement and EntrepreneurshipThermal Engineering-ITheory of MachinesIntroduction to MechatronicsIndian National BibliographySensors for MechatronicsPractical Antenna HandbookHigh Voltage EngineeringStudying EngineeringEngineering ThermodynamicsHappy First Day Of SchoolBasic Mechanical EngineeringModern Machining ProcessesIntroduction to Mechatronics and Measurement SystemsDESIGN OF MACHINE ELEMENTS (Subject Code MEC 604)Applied Partial Differential EquationsMachine Design Data Book, 2eHeat and Mass Transfer : A Textbook for the Students Preparing for B.E., B.Tech., B.Sc. Engg., AMIE, UPSC (Engg. Services) and GATE ExaminationsPOWDER METALLURGYFlight Vehicle AerodynamicsSoil Mechanics and FoundationsEngineering ThermodynamicsProgramming in CElectronic Devices and CircuitsControl Engineering

Machine Design

Fully updated, this guide is one of the most practical introductions to the design construction, installation and troubleshooting of virtually all types of antennas. This is a book enhanced by a wealth of illustrations, including example and worked-out solutions of equations. The CD-ROM includes popular shareware for antenna modeling and Visual Basic programs for customized designs.

Basic And Applied Thermodynamics 2/E

Textbook of Environmental Studies for Undergraduate Courses

Machine Design is interdisciplinary and draws its matter from different subjects such as Thermodynamics, Fluid Mechanics, Production Engineering, Mathematics etc. to name a few. As such, this book serves as a databook for various subjects of Mechanical Engineering. It also acts as a supplement to our popular book, Design of Machine Elements. It's a concise, updated data handbook that maps with the syllabi of all major universities and technical boards of India as well as professional examining bodies such as Institute of Engineers.

CNC Machines

Engineering Metrology and Measurements is a textbook designed for students of mechanical, production and allied disciplines to facilitate learning of various shop-floor measurement techniques and also understand the basics of mechanical measurements.

Basics of Laser Physics

Concept of automatic controls, Open and closed loop systems, Concepts of feedback, Requirement of an ideal control system.Mathematical Model Mechanical system (both translation and rotational), Electrical systems (servos, D.C. Motors, A.C. Servosystems), Hydraulic systems (Liquid level and fluid power systems), Thermal systems, Integrating devices, Hydraulic servomotor, Temperature control system and Error detectors.System ResponseFirst order and second order system response to step, ramp and sinusoidal inputs, Concepts of time constant and its importance in speed of response. System of stability-Routh Hurwitz Criterion.Block Diagrams Signal flow graphs and transfer functions definition, Function, Block representation of system elements, Reduction of block diagrams, Signal flow graphs, Basic properties and Gain formula to block.Control Action Types of controllers - Proportional, Integral, Proportional Integral, Proportional Integral Differential controllers (Basic concepts only).Frequency Response Polar and rectangular plots for the frequency response, System analysis using Nyquist diagrams, Relative stability concepts of gain margin and phase margin, M and N circles.System Analysis using Logarithmic PlotsBode attenuation diagrams, Stability analysis using Bode diagrams, Simplified Bode diagrams.Root Locus Plots Definition of root loci, Constructing of root loci, Graphical relationship setting the system gain.System CompensationSeries and feedback compensation, Physical devices for system compensation.State Variable Characteristics of Linear SystemsIntroduction to state concepts, State equation of linear continuous data system, Matrix representation of state equations, Controllability and observability, Kalman and Gilberts test.

Principles of Management

This textbook is for the standard, one-semester, junior-senior course that often goes by the title "Elementary Partial Differential Equations" or "Boundary Value Problems;' The audience usually consists of stu dents in mathematics, engineering, and the physical sciences. The topics include derivations of some of the standard equations of mathemati cal physics (including the heat equation, the· wave equation, and the Laplace's equation) and methods for solving those equations on bounded and unbounded domains. Methods include eigenfunction expansions or separation of variables, and methods based on Fourier and Laplace transforms. Prerequisites include calculus and a post-calculus differential equations course. There are several excellent texts for this course, so one can legitimately ask why one would wish to write another. A survey of the content of the existing titles shows that their scope is broad and the analysis detailed; and they often exceed five hundred pages in length. These books gen erally have enough material for two, three, or even four semesters. Yet, many undergraduate courses are one-semester courses. The author has often felt that students become a little uncomfortable when an instructor jumps around in a long volume searching for the right topics, or only par tially covers some topics; but they are secure in completely mastering a short, well-defined introduction. This text was written to proVide a brief, one-semester introduction to partial differential equations.

ENERGY ENGINEERING AND MANAGEMENT

The King’s Grammar

A book on Grammar. The ebook version does not contain CD.

Engineering Metrology and Measurements

Inspired by a new revival of worldwide interest in extra-high-voltage (EHV) and ultra-high-voltage (UHV) transmission, High Voltage Engineering merges the latest research with the extensive experience of the best in the field to deliver a comprehensive treatment of electrical insulation systems for the next generation of utility engineers and electric power professionals. The book offers extensive coverage of the physical basis of high-voltage engineering, from insulation stress and strength to lightning attachment and protection and beyond. Presenting information critical to the design, selection, testing, maintenance, and operation of a myriad of high-voltage power equipment, this must-have text: Discusses power system overvoltages, electric field calculation, and statistical analysis of ionization and breakdown phenomena essential for proper planning and interpretation of high-voltage tests Considers the breakdown of gases (SF6), liquids (insulating oil), solids, and composite materials, as well as the breakdown characteristics of long air gaps Describes insulation systems currently used in high-voltage engineering, including air insulation and insulators in overhead power transmission lines, gas-insulated substation (GIS) and cables, oil-paper insulation in power transformers, paper-oil insulation in high-voltage cables, and polymer insulation in cables Examines contemporary practices in insulation coordination in association with the International Electrotechnical Commission (IEC) definition and the latest standards Explores high-voltage testing and measuring techniques, from generation of test voltages to digital measuring methods With an emphasis on handling practical situations encountered in the operation of high-voltage power equipment, High Voltage Engineering provides readers with a detailed, real-world understanding of electrical insulation systems, including the various factors affecting—and the actual means of evaluating—insulation performance and their application in the establishment of technical specifications.

Design Data Handbook

Education and Training in Geo-Engineering Sciences

The entire bookhas been throughly revised and a large number of solved examples under heading Additional/Typical Worked Examples (Questions selected from various Universities and Competitive Examinations)have been added at the end of the book.

Design of Machine Elements

Modern Machining Processes presents unconventional machining methods which are gradually commercial acceptance. All aspects of mechanical, electrochemical and thermal processes are comprehensively covered.Processes likeAbrasive Jet

Machining Water Jet MachiningLaser Beam MachiningHot MachiningPlasma Arc Machininghave also been included. It gives a balanced account of both theory and applications, contains illustrative exercises and an extensive up-to-date bibliography. The book should be useful to students of production and mechanical engineering, as well as practising engineers.

Brownian Motion, Martingales, and Stochastic Calculus

Fundamental Concept in Environmental Studies

This textbook provides an introductory presentation of all types of lasers. It contains a general description of the laser, a theoretical treatment and a characterization of its operation as it deals with gas, solid state, free-electron and semiconductor lasers. This expanded and updated second edition of the book presents a description of the dynamics of free-electron laser oscillation using a model introduced in the first edition that allows a reader to understand basic properties of a free-electron laser and makes the difference to “conventional” lasers. The discussions and the treatment of equations are presented in a way that a reader can immediately follow. The book addresses graduate and undergraduate students in science and engineering, featuring problems with solutions and over 400 illustrations.

An Introduction to Energy Conversion

Management and Entrepreneurship

Thermal Engineering-I

Mechatronics is a multidisciplinary field combining Mechanical, Electronic, Computer, and other Engineering fields to develop intelligent processes and products. Based on thirty years of extensive work in industry and teaching, this book provides an overview of the sensors and sensor systems required and applied in mechatronics with an emphasis on understanding the physical principles and possible configurations of sensors rather than simply a discussion of particular types of sensors. Well illustrated with examples of commercially available sensors and of recent and future developments, this book offers help in achieving the best solution to various kinds of sensor problems encountered in mechatronics. In a clear and detailed manner, the author reviews the major types of transducers, presents a characterization of the state-of-the-art in sensing technology and offers a view on current sensor research. This book will be a vital resource for practicing engineers and students in the field. Comprehensive coverage of a wide variety of sensor concepts and basic measurement configurations encountered in the mechatronics domain Written by a recognized expert in the field who has extensive experience in industry and teaching Suitable for practicing engineers and those wanting to learn more about sensors in mechatronics

Theory of Machines

For B.A. , B.Sc. , B.Com. , B.H.Sc. , B.C.A., (Management) and other Undergraduate Classes as per UGC Model Curriculumn In addition to certain corrections, topics like Hydrologic Cycle, Air Pollution, Solar and Wind Energies are modified in the light of present requirement. Some new topics like Dissolved Oxygen, Biological Oxygen Demand, Chemical Oxygen Demand, Natural Geysers, Environmental Club, Green Accounting, Honey and Bee Keeping, Social Forestry are also introduced. With additional data, new topics and necessary diagrammes, the book will be of immense use and more popular among students and readers.

Introduction to Mechatronics

Indian National Bibliography

Sensors for Mechatronics

The 1st edition of book entitled "Design of Machine Elements" for IIIrd Year Diploma, Semester VI in Diploma in Mechanical Engineering Group as per the syllabus prescribed by SBTE. We have observed the students facing extreme difficulties in understanding the basic principles and fundamental concepts without adequate solved problems along with the text. To meet this basic requirement of students, sincere efforts have been made to present the subject matter with frequent use of figures and lots of numerical examples.

Practical Antenna Handbook

Engineering Thermodynamics has been designed for students of all branches of engineering specially undergraduate students of Mechanical Engineering. The book will also serve as reference manual for practising engineers. The book has been written in simple language and systematically develops the concepts and principles essential for understanding the subject. The text has been supplemented with solved numerical problems, illustrations and question banks.The present book has been divided in five parts:" Thermodynamic Laws and Relations" Properties of Gases and Vapours" Thermodynamics Cycles" Heat Transfer and Heat Exchangers" Annexures

High Voltage Engineering

The textbook introduces the students to the science and technology of powder metallurgy including the treatment of ceramic powders and powders of some intermetallic compounds. With improved organization and enriched contents, the book explores a thorough coverage of various aspects of powder metallurgy involving raw materials, various methods of production of metallic powders and non-metallic powders, their characteristics, technological aspects of compacting and sintering, various applications of powder metallurgy technology using different techniques as well as most of the recent developments in powder metallurgy. With

all the latest information incorporated and several key pedagogical attributes included, this textbook is an invaluable learning tool for the undergraduate students of metallurgical and materials engineering for a one semester course on powder metallurgy. It also caters to the students of mechanical engineering, automobile engineering, aerospace engineering, industrial and production engineering for their courses in manufacturing technology, processes and practices. HIGHLIGHTS OF SECOND EDITION • Sections exploring the grinding in mills, disintegration of liquid metals and alloys, some more methods for the production of iron powder by reduction of oxides, metallothermic reduction of oxides, etc. have been included. • Sections on mechanical comminution of solid materials, structural P/M parts, etc. have been modified highlighting an up to date version. • Several types of questions have been incorporated in the additional questions given at the end of book to guide the students from examination and practice point of view.AUDIENCE • For Undergraduate students of Metallurgical and Materials Engineering for a one semester course on powder metallurgy. • Mechanical Engineering, Automobile Engineering, Aerospace Engineering, Industrial and Production Engineering for their courses in manufacturing technology, processes and practices.

Studying Engineering

Illustrates common library functions with program codes and test cases, highlights possible problem areas, and provides exercises for learning to program in C.

Engineering Thermodynamics

6x9 notebook with 100 pages. This is the perfect and inexpensive back to school gift for kids to doodle, sketch, put stickers, write memories, or take notes in. Grab this amazing journal gift now!

Happy First Day Of School

An overview of the physics, concepts, theories, and models underlying the discipline of aerodynamics.

Basic Mechanical Engineering

Modern Machining Processes

The textbook is designed for B.Tech students of Electrical/Mechanical/Industrial Engineering and M.Tech students of Power System/Energy Engineering/Energy Management. It will also be useful for MBA courses on Energy Management conducted by some universities through distance education mode. The book, now in its Second Edition, offers an exhaustive discussion of the energy analysis methodologies and tools to optimize the utilization of energy and how to enhance efficiency during conversion of energy from one form to another. It illustrates the energy analysis methods used in factories, transportation systems and buildings highlighting the various forms of use. It also discusses the thermodynamic

principles of energy conversion and constitution of energy balance equation for such systems. The book examines the energy costs in our everyday life in terms of energy inputs in food cultivation. It also discusses similar energy costs of using fuels, other goods and services in our daily life KEY FEATURES • Includes numerous questions and answers on Energy Management • Contains problems and solutions on Energy Management • Provides MCQs for the preparation of certified energy auditor examination conducted by the Bureau of Energy Efficiency, GoI • Includes Case Studies NEW TO THE SECOND EDITION • Includes new chapters on Electrical Systems, Transformers, Electric Motors, Pumps and Fans, Compressors, Water Heaters, Electrolytic Processes, and Energy Control Centre • Incorporates latest topics in the existing chapters • Provides critical case studies

Introduction to Mechatronics and Measurement Systems

Machine Design is a text on the design of machine elements for the engineering undergraduates of mechanical/production/industrial disciplines. The book provides a comprehensive survey of machine elements and their analytical design methods. Besides explaining the fundamentals of the tools and techniques necessary to facilitate design calculations, the text includes extensive data on various aspects of machine elements, manufacturing considerations and materials. The extensive pedagogical features make the text student friendly and provide pointers for fast recapitulation.

DESIGN OF MACHINE ELEMENTS (Subject Code MEC 604)

This book has been developed to enable engineering students understand basic concepts of Thermal Engineering in a simple and easy to understand manner.

Applied Partial Differential Equations

Basic Mechanical Engineering covers a wide range of topics and engineering concepts that are required to be learnt as in any undergraduate engineering course. Divided into three parts, this book lays emphasis on explaining the logic and physics of critical problems to develop analytical skills in students.

Machine Design Data Book, 2e

The Importance Of Environmental Studies Cannot Be Disputed Since The Need For Sustainable Development Is A Key To The Future Of Mankind. Recognising This, The Honourable Supreme Court Of India Directed The Ugc To Introduce A Basic Course On Environmental Education For Undergraduate Courses In All Disciplines, To Be Implemented By Every University In The Country. Accordingly, The Ugc Constituted An Expert Committee To Formulate A Six-Month Core Module Syllabus For Environmental Studies. This Textbook Is The Outcome Of The Ugc S Efforts And Has Been Prepared As Per The Syllabus. It Is Designed To Bring About An Awareness On A Variety Of Environmental Concerns. It Attempts To Create A Pro-Environmental Attitude And A Behavioural Pattern In Society That Is Based On Creating Sustainable Lifestyles And A New Ethic Towards Conservation. This Textbook Stresses On A Balanced View Of Issues That Affect Our Daily Lives. These

Issues Are Related To The Conflict Between Existing `Development Strategies And The Need For `Conservation . It Not Only Makes The Student Better Informed On These Concerns, But Is Expected To Lead The Student Towards Positive Action To Improve The Environment. Based On A Multidisciplinary Approach That Brings About An Appreciation Of The Natural World And Human Impact On Its Integrity, This Textbook Seeks Practical Answers To Make Human Civilization Sustainable On The Earth S Finite Resources. Attractively Priced At Rupees One Hundred And Fifteen Only, This Textbook Covers The Syllabus As Structured By The Ugc, Divided Into 8 Units And 50 Lectures. The First 7 Units, Which Cover 45 Lectures Are Classroom Teaching-Based, And Enhance Knowledge Skills And Attitude To Environment. Unit 8 Is Based On Field Activities To Be Covered In 5 Lecture Hours And Would Provide Students With First Hand Knowledge On Various Local Environmental Issues.

Heat and Mass Transfer : A Textbook for the Students Preparing for B.E., B.Tech., B.Sc. Engg., AMIE, UPSC (Engg. Services) and GATE Examinations

About the Book: Of late, academicians of technical education have felt the importance of ''Management'' and ''Entrepreneurship''. Engineers need to manage their departments/sections/subordinates, and Entrepreneurship helps the large pool of technical manpower in developing small-scale industries in high tech areas thereby contributing to the economy of the country. This book covers both 'Management' and 'Entrepreneurship'. The first chapters of this book deal with Management, Planning, Organizing and Staffing, Directing and Controlling. The last four chapters deal with Entrepreneurship, Small-Scale Industries, Institutional support and Project formulation. Adequate number of simple examples with which the students are familiar are included in each chapter. In addition, each chapter contains student learning activities to give the readers a chance to enhance the learning process. Though the book is written keeping in mind the syllabus of Visvesvaraya Technological University, yet it is useful for B.Com, BBM, DBM,. PGDBM and MBA students also. Contents: Management Planning Organizing and Staffing Directing and Controlling Entrepreneurship Small-Scale Industries Institutional Support Preparation of Project.

POWDER METALLURGY

Management in all business and human organization activity is simply the act of getting people together to accomplish desired goals. Management comprises planning, organizing, staffing, leading or directing, and controlling an organization or effort for the purpose of accomplishing a goal. The Principles of Management are the essential, underlying factors that form the foundations of successful management. Essentials of management make the connection between theory and concepts to actual practice by showing how managers and organizations effectively apply the basic principles of management.

Flight Vehicle Aerodynamics

Soil Mechanics and Foundations

While writing the book,we have continuously kept in mind the examination requirments of the students preparing for U.P.S.C.(Engg. Services)and A.M.I.E.(I)examinations.In order to make this volume more useful for them,complete solutions of their examination papers up to 1975 have also been included.Every care has been taken to make this treatise as self-explanatory as possible.The subject matter has been amply illustrated by incorporating a good number of solved,unsolved and well graded examples of almost every variety.

Engineering Thermodynamics

This book offers a rigorous and self-contained presentation of stochastic integration and stochastic calculus within the general framework of continuous semimartingales. The main tools of stochastic calculus, including Itô's formula, the optional stopping theorem and Girsanov's theorem, are treated in detail alongside many illustrative examples. The book also contains an introduction to Markov processes, with applications to solutions of stochastic differential equations and to connections between Brownian motion and partial differential equations. The theory of local times of semimartingales is discussed in the last chapter. Since its invention by Itô, stochastic calculus has proven to be one of the most important techniques of modern probability theory, and has been used in the most recent theoretical advances as well as in applications to other fields such as mathematical finance. Brownian Motion, Martingales, and Stochastic Calculus provides a strong theoretical background to the reader interested in such developments. Beginning graduate or advanced undergraduate students will benefit from this detailed approach to an essential area of probability theory. The emphasis is on concise and efficient presentation, without any concession to mathematical rigor. The material has been taught by the author for several years in graduate courses at two of the most prestigious French universities. The fact that proofs are given with full details makes the book particularly suitable for self-study. The numerous exercises help the reader to get acquainted with the tools of stochastic calculus.

Programming in C

Introduction to Mechatronics discusses the design of simpler, more economical, reliable, and versatile systems based on the principles of mechanics, electronics, and computing. The book describes the historical development of mechatronic systems and provides a basic background for mechatronic systems engineering. The introductory topics on mechatronics are dealt with in the book and it will prove to be very useful for undergraduate and postgraduate students as well as practice engineers.Beginning with the basic concepts of mechatronic systems, the book provides a comprehensive coverage of topics including system modelling and analysis, application of microprocessors and microcontrollers in mechatronic systems, sensors and actuators in mechatronic systems, intelligent systems for accurate operation of mechatronic systems, and application of mechatronic systems in autotronics, bionics, and avionics.

Electronic Devices and Circuits

Revised extensively, the new edition of this text conforms to the syllabi of all Indian Universities in India. This text strictly focuses on the undergraduate syllabus of Design of Machine Elements I and II , offered over two semesters.

Control Engineering

In recent years the International Society for Soil Mechanics and Geotechnical Engineering (ISSMGE), the International Association for Engineering Geology and Environment (IAEG), and the International Society for Rock Mechanics (ISRM) have concluded a Cooperation Agreement, leading to the foundation of the Federation of International Geo-engineering

ROMANCE ACTION & ADVENTURE MYSTERY & THRILLER BIOGRAPHIES & HISTORY CHILDREN'S YOUNG ADULT FANTASY HISTORICAL FICTION HORROR LITERARY FICTION NON-FICTION SCIENCE FICTION