

Anna University Eee Syllabus Regulation 2008 Rkncame

PREFACE OF THE BOOK This book is extensively designed for the third semester EEE/EIE students as per Anna university syllabus R-2013. The following chapters constitute the following units Chapter 1, 9 covers :-Unit 1Chapter 2 and 3 covers :-Unit 2Chapter 4 and 5 covers :-Unit 3Chapter 6 and 7 covers :- Unit 4Chapter 8 VHDL :-Unit 5 CHAPTER 1: Introduces the Number System, binary arithmetic and codes. CHAPTER 2: Deals with Boolean algebra, simplification using Boolean theorems, K-map method , Quine McCluskey method, logic gates, implementation of switching function using basic Logical Gates and Universal Gates. CHAPTER 3: Describes the combinational circuits like Adder, Subtractor, Multiplier, Divider, magnitude comparator, encoder, decoder, code converters, Multiplexer and Demultiplexer. CHAPTER 4: Describes with Latches, Flip-Flops, Registers and Counters CHAPTER 5: Concentrates on the Analysis as well as design of synchronous sequential circuits, Design of synchronous counters, sequence generator and Sequence detector CHAPTER 6: Concentrates the Design as well as Analysis of Fundamental Mode circuits, Pulse mode Circuits, Hazard Free Circuits, ASM Chart and Design of Asynchronous counters. CHAPTER 7: Discussion on memory devices which includes ROM, RAM, PLA, PAL, Sequential logic devices and ASIC. CHAPTER 8: The chapter concentrates on the design, fundamental building blocks, Data types, operates, subprograms, packages, compilation process used for VHDL. It discusses on Finite state machine as an important tool for designing logic level state machines. The chapter also discusses register transform level designing and test benches usage in stimulation of the state logic machines CHAPTER 9: Concentrate on the comparison, operation and characteristics of RTL, DTL, TTL, ECL and MOS families. We have taken enough care to present the definitions and statements of basic laws and theorems, problems with simple steps to make the students familiar with the fundamentals of Digital Design.

This book is written so that it serves as a text book for B.E./B.Tech degree students in general and for the institutions where AICTE model curriculum has been adopted. TOPICS COVERED IN THIS BOOK:- Magnetic field and Magnetic circuit Electromagnetic force and torque D.C. Machines D.C. Machines-Motoring and Generation SALIENT FEATURES:- Self-contained, self-explanatory and simple to follow text. Numerous worked out examples. Well Explained theory parts with illustrations. Exercises, objective type question with answers at the end of each chapter.

Since the publication of Carr and Brown's biomedical equipment text more than ten years ago, it has become the industry standard. Now, this completely revised second edition promises to set the pace for modern biomedical equipment technology.

Introduction to C Programming 2e is designed to serve as a textbook for the undergraduate students of engineering, computer applications, and computer science for a basic course on C programming. The book focuses on the fundamentals to enable students to write effective C programs.

With MATLAB and SIMULINK

An Interdisciplinary Approach

Machine Drawing

Introduction to Programming in Python

Linear Control System Analysis and Design with MATLAB®, Sixth Edition

The second edition of this book 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. What is New to This Edition Vector transformations in different coordinate systems have been included in the chapter on Vector Analysis. The treatment forms the basis of vector potentials for three-dimensional problems. Chapter 13 on Vector Potentials has been significantly expanded for a clear understanding of the properties of vector potentials, in order to also solve three-dimensional EM problems numerically. A section dealing with the derivation and interpretation of Hertz Vector has been included in Chapter 13. A practical problem on induction heating of flat metal plates has been added to the chapter on Magnetic Diffusion. The topics of wave guidance and radiation have been expanded with emphasis on practical aspects. Sections on analysis of cylindrical dielectric waveguide (e.g. of optical fibres) have been added to Chapters 18 and 22. New sections on basis and explanations of modal transmissions have been added. Characteristics and practical details of basic antenna structures and arrays have been treated in greater detail. Provides comprehensive treatment of FEM (Finite Element Method), covering both its variational basis and procedural details, to enable the readers to use this method without going into the heavy mathematics underlying the method. Describes FDM (Finite Difference Method) in more detail with its convergence requirement. Introduces modern numerical methods like FDTD (Finite Difference Time Domain) and method of moments (MOM). A new chapter on Modern Topics and Applications covers both high frequency and low frequency applications. Appendices contain in-depth analysis of self-inductance and non-conservative fields (Appendix 6), proof regarding the boundary conditions (Appendix 8), theory of bicylindrical coordinate 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.

Increased AC power processed through power electronics converters, there is a compelling need for improved understanding of mitigation techniques for power quality problems. This timely book comprehensively identifies, classifies, and quantifies all associated power quality problems, including the direct integration of renewable energy sources in the distribution system, and systematically delivers mitigation techniques to overcome these problems. Key features: Emphasis on in-depth learning of the latest topics in power quality extensively illustrated with waveforms and phasor diagrams. Essential theory supported by solved numerical examples, review questions, and unsolved numerical problems to reinforce understanding. Companion website contains solutions to unsolved numerical problems, providing hands-on experience. Senior undergraduate and graduate electrical engineering students and instructors will find this an invaluable resource for education in the field of power quality. It will also support continuing professional development for practicing engineers in distribution and transmission system operators.

An important new resource for the international utility market Over the past two decades, static reactive power compensators have evolved into a mature technology and become an integral part of modern electrical power systems. They are one of the key devices in flexible AC transmission systems (FACTS). Coordination of static compensators with other controllable FACTS devices promises not only tremendously enhanced power system controllability, but also the extension of power transfer capability of existing transmission corridors to near their thermal capacities, thus delaying or even curtailing the need to invest in new transmission facilities. Offering both an in-depth presentation of theoretical concepts and practical applications pertaining to these power compensators, Thyristor-Based FACTS Controllers for Electrical Transmission Systems fills the need for an appropriate text on this emerging technology. Replete with examples and case studies on control design and performance, the book provides an important resource for both students and engineers working in the field.

"Wind Electrical Systems provides an integrated and comprehensive treatment of wind energy conversion without assuming any background of the subject. Beginning with the basics of wind energy, the book goes on to discuss conversion of wind energy into electrical energy, wind energy integration with the local grid, stand-alone generation and consumption, and variable-speed wind generators. The book ends with a discussion of hybrid power systems where wind energy in integrated with another energy source such as solar energy or diesel generators to provide reliable power." "With its wide inter-disciplinary coverage, the book would serve as an indispensable text for students of electrical, mechanical, and energy engineering as well as practising engineers."--BOOK JACKET.

Introduction to C Programming

Schaum's Outline of Electromagnetics, 4th Edition

Thyristor-Based FACTS Controllers for Electrical Transmission Systems

Developments in Water Treatment 2

A Textbook of Strength of Materials

Today, anyone in a scientific or technical discipline needs programming skills. Python is an ideal first programming language, and Introduction to Programming in Python is the best guide to learning it. Princeton University's Robert Sedgewick, Kevin Wayne, and Robert Dondero have crafted an accessible, interdisciplinary introduction to programming in Python that emphasizes important and engaging applications, not toy problems. The authors supply the tools needed for students to learn that programming is a natural, satisfying, and creative experience. This example-driven guide focuses on Python's most useful features and brings programming to life for every student in the sciences, engineering, and computer science. Coverage includes Basic elements of programming: variables, assignment statements, built-in data types, conditionals, loops, arrays, and I/O, including graphics and sound Functions, modules, and libraries: organizing programs into components that can be independently debugged, maintained, and reused Object-oriented programming and data abstraction: objects, modularity, encapsulation, and more Algorithms and data structures: sort/search algorithms, stacks, queues, and symbol tables Examples from applied math, physics, chemistry, biology, and computer science—all compatible with Python 2 and 3 Drawing on their extensive classroom experience, the authors provide Q&As, exercises, and opportunities for creative practice throughout. An extensive amount of supplementary information is available at introcs.cs.princeton.edu/python. With source code, I/O libraries, solutions to selected exercises, and much more, this companion website empowers people to use their own computers to teach and learn the material.

Thoroughly classroom-tested and proven to be a valuable self-study companion, Linear Control System Analysis and Design: Sixth Edition provides an intensive overview of modern control theory and conventional control system design using in-depth explanations, diagrams, calculations, and tables. Keeping mathematics to a minimum, the book is designed with the undergraduate in mind, first building a foundation, then bridging the gap between control theory and its real-world application. Computer-aided design accuracy checks (CADAC) are used throughout the text to enhance computer literacy. Each CADAC uses fundamental concepts to ensure the viability of a computer solution. Completely updated and packed with student-friendly features, the sixth edition presents a range of updated examples using MATLAB®, as well as an appendix listing MATLAB functions for optimizing control system analysis and design. Over 75 percent of the problems presented in the previous edition have been revised or replaced.

About the book... The book provides an integrated treatment of continuous-time and discrete-time systems for two courses at postgraduate level, or one course at undergraduate and one course at postgraduate level. It covers mainly two areas of modern control theory, namely: system theory, and multivariable and optimal control. The coverage of the former is quite exhaustive while that of latter is adequate with significant provision of the necessary topics that enables a research student to comprehend various technical papers. The stress is on interdisciplinary nature of the subject. Practical control problems from various engineering disciplines have been drawn to illustrate the potential concepts. Most of the theoretical results have been presented in a manner suitable for digital computer programming along with the necessary algorithms for numerical computations.

Any good text book,particularly that in the fast changing fields such as engineering & technology,is not only expected to cater to the current curricular requirements of various institutions but also should provide a glimpse towards the latest developments in the concerned subject and the relevant disciplines.It should guide the periodic review and updating of the curriculum.

Fundamentals and Applications

Control Systems Engineering

Analysis and Application of Analog Electronic Circuits to Biomedical Instrumentation

Power Quality

ELECTROMAGNETISM

The interface between the user of a computer-based information system and the system itself has been evolving at a rapid rate. The use of a video screen, with its color and graphics capabilities, has been one factor in this evolution. The development of light pens, mice, and other screen image manipulation devices has been another. With these capabilities has come a natural desire to find more effective ways to make use of them. In particular, much work has gone into the development of interface systems that add visual elements such as icons and graphics to text. The desire to use these visual elements effectively in communication between the user and the system has resulted in a healthy competition of ideas and discussion of the principles governing the development and use of such elements. The present volume chronicles some of the more significant ideas that have recently been presented. The first volume in this series on the subject [Visual Languages (Chang, Ichikawa, and Ligomenides, eds.), Plenum, 1986] covered work done in the early days of the field of visual languages. Here we represent ideas that have grown out of that early work, arranged in six sections: Theory, Design Systems, Visual Programming, Algorithm Animation, Simulation Animation, and Applications. I THEORY Fundamental to the concept of visual languages is the conviction that diagrams and other visual representations can aid understanding and communication of ideas. We begin this volume with a chapter by Farysa S.

Tough Test Questions? Not Enough Time? Fortunately, there's Schaum's. This all-in-one package includes more than 350 fully solved problems, examples, and practice exercises to sharpen your problem-solving skills. Plus, you will have access to 20 detailed videos featuring instructors who explain the most commonly tested problems--it's just like having your own virtual tutor! You'll find everything you need to build confidence, skills, and knowledge for the highest score possible. More than 40 million students have trusted Schaum's to help them succeed in the classroom and on exams. Schaum's is the key to faster learning and higher grades in every subject. Each Outline presents all the essential course information in an easy-to-follow, topic-by-topic format. You also get hundreds of examples, solved problems, and practice exercises to test your skills. This Schaum's Outline gives you 351 fully solved problems Exercises to help you test your mastery of electromagnetics Support for all the major textbooks for electromagnetic courses Fully compatible with your classroom text, Schaum's highlights all the important facts you need to know. Use Schaum's to shorten your study time--and get your best test scores! Schaum's Outlines--Problem Solved.

Environmental Science & Engineering

This book introduces the basic mathematical tools used to describe noise and its propagation through linear systems and provides a basic description of the improvement of signal-to-noise ratio by signal averaging and linear filtering. The text also demonstrates how op amps are the keystone of modern analog signal conditioning systems design, and il

Programming in C

Theory and Applications

Electrical Machines-I

Fundamentals of Python

Introduction to Biomedical Equipment Technology

This comprehensive book covers the five major NDT methods - liquid penetrants, eddy currents, magnetic particles, radiography and ultrasonics in detail and also considers newer methods such as acoustic emission and thermography and discusses their role in on-line monitoring of plant components. Analytical techniques such as reliability studies and statistical quality control are considered in terms of their ability to reduce inspection costs and limit down time. A useful chapter provides practical guidance on selecting the right method for a given situation.

Digital Systems: Principles and Design (For Anna University) is designed as an ideal textbook for students of electrical engineering. The book's coverage also meets the requirements of the Digital Electronics paper of the Electronics and Communication Engineering course, and of the Digital Principles and System Design paper of the Computer Science Engineering course. Spread across 18 chapters, the book covers digital fundamentals through worked-out examples and facilitates a firm understanding of the subject.

About the Book: Written by three distinguished authors with ample academic and teaching experience, this textbook, meant for diploma and degree students of Mechanical Engineering as well as those preparing for AMIE examination, incorporates the latest st

In this book, Tewari emphasizes the physical principles and engineering applications of modern control system design. Instead of detailing the mathematical theory, MATLAB examples are used throughout.

Disaster Management

Transforms and Partial Differential Equations

Electrical Machines - I

(in S.I. Units)

Digital Logic Circuits

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.

This book covers the complete syllabi prescribed for undergraduate courses in electrical, electronics, mechanical and instrumentation engineering offered by various Indian universities. The objective of this text is to provide thorough knowledge in the emerging field of special electrical machines. It discusses the stepper motor, switched reluctance motor, permanent magnet dc and ac motors, brushless dc motors, single phase special electric motors, servomotors, linear electric machines and permanent magnet axial flux machines. Key Features • Chapter on permanent magnet axial flux machines (not available in other Indian authors' books) • Numerous worked-out examples • Based on classroom tested materials • Simplified mathematical analysis Besides undergraduate students, the book will also be useful to the postgraduate students specialising in drives and control, power electronics, control systems and mechatronics.

Basic Electrical and Electronics Engineering provides an overview of the basics of electrical and electronic engineering that are required at the undergraduate level. The book allows students outside electrical and electronics engineering to easily fluency with physics fundamentals and problem-solving has a collateral effect on students by enhancing their analytical reasoning skills. In a sense, physics is to intellectual pursuits what strength training is to sports. Designed for a two-semester algebra-based course, Essential Physics provides a thorough understanding of the fundamentals of physics central to many fields. It omits material often found in much larger texts that cannot be covered in a year-long course and is not needed for non-physics majors. Instead, this text focuses on providing a solid understanding of basic physics and physical principles. While not delving into the more specialized areas of the field, the text thoroughly covers mechanics, electricity and magnetism, light, and modern physics. This book is appropriate for a course in which the goals are to give the students a grasp of introductory physics and enhance their analytical problem-solving skills. Each topic includes worked examples. Math is introduced as necessary, with some applications in biology, chemistry, and safety science also provided. If exposure to more applications, special topics, and concepts is desired, this book can be used as a problem-solving supplement to a more inclusive text.

Elements of Properties of Matter

MICROPROCESSORS AND MICROCONTROLLERS

First Programs

Problems and Mitigation Techniques

Electrical Engineering

Written in lucid language, the book offers a detailed treatment of fundamental concepts of chemistry and its engineering applications.

The book is a comprehensive work on Properties of Matter which introduces the students to the fundamentals of the subject. It adopts a unique 'ab initio' approach to the presentation of matter- solids, liquids and gasses- with extensive usage of Calculus throughout the book. For each topic, the focus is on optimum blend of theory as well as practical application. Examples and extensive exercises solved with the logarithms reinforce the concepts and stimulate the desire among users to test how far they have grasped and imbibed the basic principles. It primarily caters to the undergraduate courses offered in Indian universities.

Introduction to C Programming

Presents the important topics for a CS1 course while preparing your students to study additional languages. This book uses the Python programming language, which is both easy to learn for beginners and scales well to advanced applications.

Practical Non-destructive Testing

Modern Control Design

SPECIAL ELECTRICAL MACHINES

Power Electronics for Renewable Energy Systems, Transportation and Industrial Applications

Compiles current research into the analysis and design ofpower electronic converters for industrial applications andrenewable energy systems, presenting modern and future applicationsof power electronics systems in the field of electricalvehicles With emphasis on the importance and long-term viability of PowerElectronics for Renewable Energy this book brings together thestate of the art knowledge and cutting-edge techniques in variousstages of research. The topics included are not currentlyavailable for practicing professionals and aim to enable the readers to directly apply the knowledge gained to their designs. The bookaddresses the practical issues of current and future electric andplug-in hybrid electric vehicles (PHEVs), and focuses primarily onpower electronics and motor drives based solutions for electricvehicle (EV) technologies. Propulsion system requirements and motorsize for EVs is discussed, along with practical system sizingexamples. Key EV battery technologies are explained as well ascorresponding battery management issues. PHEV power systemarchitectures and advanced power electronics intensive charginginfrastructures for EVs and PHEVs are detailed. EV/PHEV interfacewith renewable energy is described, with practical examples. Thisbook explores new topics for further researc needed world-wide,and defines existing challenges, concerns, and selected problemsthat comply with international trends, standards, and programs forelectric power conversion, distribution, and sustainable energydevelopment. It will lead to the advancement of the currentstate-of-the-art applications of power electronics for renewableenergy, transportation, and industrial applications and will helpadd experience in the various industries and academia about theeenergy conversion technology and distributed energysources. Combines state of the art global expertise to present thelatest research on power electronics and its application intransportation, renewable energy and different industrialapplications Offers an overview of existing technology and future trends,with discussion and analysis of different types of converters andcontrol techniques (power converters, high performance powerdevices, power system, high performance control system and novelapplications) Systematic explanation to provide researchers with enoughbackground and understanding to go deeper in the topics covered inthe book

Primarily intended for diploma, undergraduate and postgraduate students of electronics, electrical, mechanical, information technology and computer engineering, this book offers an introduction to microprocessors and microcontrollers. The book is designed to explain basic concepts underlying programmable devices and their interfacing. It provides complete knowledge of the Intel's 8085 and 8086 microprocessors and 8051 microcontroller, their architecture, programming and concepts of interfacing of memory, IO devices and programmable chips. The text has been organized in such a manner that a student can understand and get well-acquainted with the subject, independent of other reference books and Internet sources. It is of greater use even for the AMIE and ITEE students--those who do not have the facility of classroom teaching and laboratory practice. The book presents an integrated treatment of the hardware and software aspects of the 8085 and 8086 microprocessors and 8051 microcontroller. Elaborated programming, solved examples on typical interfacing problems, and a useful set of exercise problems in each chapter serve as distinguishing features of the book.

Semiconductor Device Physics and Design teaches readers how to approach device design from the point of view of someone who wants to improve devices and can see the opportunity and challenges. It begins with coverage of basic physics concepts, including the physics behind polar heterostructures and strained heterostructures. The book then details the important devices ranging from p-n diodes to bipolar and field effect devices. By relating device design to device performance and then relating device needs to system use the student can see how device design works in the real world.

Scientific advances in both processes and techniques have proceeded so fast in recent years that personnel, other than the particular specialist, are finding it increasingly difficult to be aware of the developing aspects of the water industry with which they are not in daily contact. This book, like the first volume in the series, Developments in Water Treatment - 1, will provide an up-to-date reference work whereby the worker can quickly assimilate a brief historical background in the important aspects of Water Treatment and then pursue the significant relevant scientific developments. The subjects dealt with in this volume cover filtration, the removal of organic and nitrogenous compounds, desalination, disinfection, sludge treatment and disposal and water quality monitoring. Each contributor is an expert drawn from within the water industry thus bringing a wide range of experience to each subject dealt with.

Basic civil and mechanical engineering

Visual Languages and Applications

Environmental Science and Engineering (For Anna University)

Semiconductor Device Physics and Design

Essential Physics

Beginning with an overview of the basic concepts of computers, the book provides an exhaustive coverage of C programming constructs. It then focuses on arrays, strings, functions, pointers, user-defined data types, and files. In addition, the book also provides a chapter on linked lists - apopular data structure - and different operations that can be performed on such lists.Students will find this book an excellent companion for self-study owing to its easy-to-understand approach with plenty of programs complete with source codes, sample outputs, and test cases.

Plane surveying is a textbook on surveying which provides exhaustive coverage on the subject.Each chapter is preceded by an introduction to show the contents of the chapter at a glance.

Modern Control System Theory

Engineering Chemistry

WIND ELECTRICAL SYSTEMS

Digital Systems: Principles and Design (For Anna University)

A Textbook on Principles of Management (As per Anna University)