

# Engineering Electronics Techmax Pune University

Solid Waste Management Proceedings of Seventh  
International Conference on Bio-Inspired Computing:  
Theories and Applications (BIC-TA 2012) Digital  
Communication Air-conditioning System Design  
Manual Analog And Digital Communication Elements Of  
Electrical Engineering Computer Networks Methods and  
Techniques in Urban Engineering Material  
Science Structural Analysis-II, 4th Edition Basic  
Electrical Engineering Project Management and  
Engineering Economics Business Communication  
(SIE) Digital Electronics Software Testing and Quality  
Assurance Data Structures: A Pseudocode Approach  
with C English in Mind Level 1B Combo with Audio  
CD/CD-ROM Engineering Materials &  
Metallurgy Pharmaceuticals-II Engineering  
Mathematics Principles Of Communication Probability  
and Combinatorics Antennas and Wave  
Propagation Discrete Structure and Graph Theory Vlsi  
Design Technology Electronics Devices And  
Circuits Electrical Machines Logic Design Dynamics of  
Machinery Electromagnetic Field Theory Antennas and  
Wave Propagation Problem Solving and Object  
Oriented Programming Digital Electronics (Digital  
Logic Design) Distributed Operating  
Systems Embedded Systems and  
Robots Environmental Studies Microcontroller &  
Applications Engineering Mathematics - III Introduction  
to Mechatronics and Measurement  
Systems TEXTBOOK OF FINITE ELEMENT ANALYSIS

## **Solid Waste Management**

This book covers a selection of topics on combinatorics, probability and discrete mathematics useful to the students of MCA, MBA, computer science and applied mathematics. The book uses a different approach in explaining these subjects, so as to be equally suitable for the students with different backgrounds from commerce to computer engineering. This book not only explains the concepts and provides variety of solved problems, but also helps students to develop insight and perception, to formulate and solve mathematical problems in a creative way. The book includes topics in combinatorics like advance principles of counting, combinatorial identities, concept of probability, random variables and their probability distributions, discrete and continuous standard distributions and jointly random variables, recurrence relations and generating functions. This book completely covers MCA syllabus of Pune University and will also be suitable for undergraduate science courses like B.Sc. as well as management courses.

## **Proceedings of Seventh International Conference on Bio-Inspired Computing: Theories and Applications (BIC-TA 2012)**

Structural analysis, or the 'theory of structures', is an important subject for civil engineering students who are required to analyse and design structures. It is a vast field and is largely taught at the undergraduate level. A few topics like matrix method and plastic

analysis are also taught at the postgraduate level and in Structural Engineering electives. The entire course has been covered in two volumes—Structural Analysis-I and II. Structural Analysis-II deals in depth with the analysis of indeterminate structures, and also special topics like curved beams and unsymmetrical bending. It provides an introduction to advanced methods of analysis, namely, matrix method and plastic analysis.

**SALIENT FEATURES**

- Systematic explanation of concepts and underlying theory in each chapter
- Numerous solved problems presented methodically
- University examination questions solved in many chapters
- A set of exercises to test the student's ability in solving them correctly

**NEW IN THE FOURTH EDITION**

- Thoroughly reworked computations
- Objective type questions and review questions
- A revamped summary for each chapter
- Redrawing of some diagrams

## **Digital Communication**

A superior primer on software testing and quality assurance, from integration to execution and automation This important new work fills the pressing need for a user-friendly text that aims to provide software engineers, software quality professionals, software developers, and students with the fundamental developments in testing theory and common testing practices. Software Testing and Quality Assurance: Theory and Practice equips readers with a solid understanding of: Practices that support the production of quality software Software testing techniques Life-cycle models for requirements,

defects, test cases, and test results Process models for units, integration, system, and acceptance testing How to build test teams, including recruiting and retaining test engineers Quality Models, Capability Maturity Model, Testing Maturity Model, and Test Process Improvement Model Expertly balancing theory with practice, and complemented with an abundance of pedagogical tools, including test questions, examples, teaching suggestions, and chapter summaries, this book is a valuable, self-contained tool for professionals and an ideal introductory text for courses in software testing, quality assurance, and software engineering.

## **Air-conditioning System Design Manual**

## **Analog And Digital Communication**

## **Elements Of Electrical Engineering**

This second edition expands upon the solid, practical foundation established in the first edition of the text. Important Notice: Media content referenced within the product description or the product text may not be available in the ebook version.

## **Computer Networks**

Dynamic loads and undesired oscillations increase with higher speed of machines. At the same time, industrial safety standards require better vibration

reduction. This book covers model generation, parameter identification, balancing of mechanisms, torsional and bending vibrations, vibration isolation, and the dynamic behavior of drives and machine frames as complex systems. Typical dynamic effects, such as the gyroscopic effect, damping and absorption, shocks, resonances of higher order, nonlinear and self-excited vibrations are explained using practical examples. These include manipulators, flywheels, gears, mechanisms, motors, rotors, hammers, block foundations, presses, high speed spindles, cranes, and belts. Various design features, which influence the dynamic behavior, are described. The book includes 60 exercises with detailed solutions. The substantial benefit of this "Dynamics of Machinery" lies in the combination of theory and practical applications and the numerous descriptive examples based on real-world data. The book addresses graduate students as well as engineers.

## **Methods and Techniques in Urban Engineering**

### **Material Science**

Microprocessors and Microcontrollers Microprocessors and microcontrollers, A microprocessors survey, Development systems for microcontrollers, RISC & CISC CPU architectures, Harvard & Von-Neumann CPU architecture. The 8051 Architecture 8051 microcontroller hardware, Input/output pins, Ports and circuits. External memory, Counter and timers, Serial data

input/output, Interrupts.8051 Addressing Modes and Moving DataAddressing modes, External data moves, Code memory, Read only data moves / Indexed addressing mode, PUSH and POP opcodes, Data exchanges, Example programs.Logical Operations, Arithmetic Operations, Jump OperationsLogical operations : Byte level logical operations, Bit level logical operations, Rotate and Swap operations, Example programs. Arithmetic operations : Flags, Incrementing and decrementing, Addition, Subtraction, Multiplication and Division, Decimal arithmetic, Example programs. Jump operations : The JUMP and CALL program range, Jump calls and subroutines, Interrupts and returns, More detail on interrupts, Example problems.Counter / Timer Programming in 8051Programming 8051 timers, Counter programming.8051 Serial CommunicationBasics of serial communication, 8051 connections to RS-232, 8051. Serial communication programming.Interrupts Programming8051 Interrupts, Programming timer interrupts, Programming external hardware interrupts, Interrupt priority in the 8051.8051 Interfacing and ApplicationsInterfacing 8051 to LCD, ADC, Temperature sensor, DAC, Stepper motor, Keyboard, 8255.

## **Structural Analysis-II, 4th Edition**

OSI, TCP/IP and other networks models, Examples of networks : Novell networks, Arpanet, Internet, Network topologies WAN, LAN, MAN.Physical LayerTransmission media copper, Twisted pair wireless, Switching and encoding asynchronous

communications; Narrow band, Broad band ISDN and ATM. Data Link Layer Design issues, framing, error detection and correction, CRC, Elementary protocol-stop and wait Sliding window, Slip, Data link layer in HDLC, Internet, ATM. Medium Access Sublayer ALOHA, MAC addresses, Carrier sense multiple access. IEEE 802.X Standard ethernet, Wireless LANs, Bridges. Network Layer Virtual circuit and datagram subnets - Routing algorithm shortest path routing, Flooding, Hierarchical routing, Broadcast, Multicast, Distance vector routing. Dynamic routing - Broadcast routing, Rotary for mobility. Congestion, Control algorithms - General principles of congestion prevention policies. Internet working. The network layer in the Internet and in the ATM networks. Transport Layer Transport services, Connection management, TCP and UDP protocols; ATM AAL layer protocol. Application Layer Network security, Domain name system, SNMP, Electronic mail; the World WEB, Multimedia.

## **Basic Electrical Engineering**

## **Project Management and Engineering Economics**

## **Business Communication (SIE)**

Embedded Systems & Robots: Projects Using The 8051 Microcontroller is meant to serve as a reference book on real-time embedded system design and the

applications of the 8051 microcontroller for undergraduate as well as postgraduate students of computer science, information technology, electronics, instrumentation, mechatronics, and other related disciplines. The book will also prove useful to general readers who wish to understand and fabricate simple working models of robots. This book adopts a do-it-yourself approach, starting with very simple projects and slowly leading to more complex items. It includes discussions on real-time embedded systems and provides step-by-step instructions for design and construction of different types of simple robots. The book highlights the need for accurate scheduling in real-time systems and indicates the related solution-techniques through assembly language programming. It contains discussions on importance of data structures in real-time scheduling (Chapter 7) and interfacing issues of sensors such as SONAR, infrared, LDR, and tactile sensors. The book provides complete fabrication blue-prints of several robot examples, including line-follower robot, maze-solving robot, obstruction-detecting robot, shadow-activated robot, learning robot, and humanoid robot. The book uses simple and lucid language for easy understanding of the concepts involved. A large number of illustrations (in colour where required) have been incorporated to enhance understanding of relevant technical details. All circuits shown in the book have been tested. Review exercises, including objective-type questions have been provided at the end of every chapter to test the studentsa understanding of the topics discussed.



## **Digital Electronics**

This treatise on Engineering Materials and Metallurgy contains comprehensive treatment of the matter in simple, lucid and direct language and envelopes a large number of figures which reinforce the text in the most efficient and effective way. The book comprises five chapters (excluding basic concepts) in all and fully and exhaustively covers the syllabus in the above mentioned subject of 4th Semester Mechanical, Production, Automobile Engineering and 2nd semester Mechanical disciplines of Anna University.

## **Software Testing and Quality Assurance**

The fundamentals and implementation of digital electronics are essential to understanding the design and working of consumer/industrial electronics, communications, embedded systems, computers, security and military equipment. Devices used in applications such as these are constantly decreasing in size and employing more complex technology. It is therefore essential for engineers and students to understand the fundamentals, implementation and application principles of digital electronics, devices and integrated circuits. This is so that they can use the most appropriate and effective technique to suit their technical need. This book provides practical and comprehensive coverage of digital electronics, bringing together information on fundamental theory, operational aspects and potential applications. With worked problems, examples, and review questions for

each chapter, Digital Electronics includes: information on number systems, binary codes, digital arithmetic, logic gates and families, and Boolean algebra; an in-depth look at multiplexers, de-multiplexers, devices for arithmetic operations, flip-flops and related devices, counters and registers, and data conversion circuits; up-to-date coverage of recent application fields, such as programmable logic devices, microprocessors, microcontrollers, digital troubleshooting and digital instrumentation. A comprehensive, must-read book on digital electronics for senior undergraduate and graduate students of electrical, electronics and computer engineering, and a valuable reference book for professionals and researchers.

## **Data Structures: A Pseudocode Approach with C**

1 Logic And Proofs 2 theory of Sets 3 Permutations, Combinations And Discrete Probability 4 Relations 5 Functions 6 Recurrence Relations 7 Analysis of Algorithms 8 Graph Theory 9 Trees 10 Groups And Rings 11 Boolean Algebras

## **English in Mind Level 1B Combo with Audio CD/CD-ROM**

## **Engineering Materials & Metallurgy**

Aimed at a single-semester course on antennas at the undergraduate level, Antennas and Wave Propagation

provides a lucid explanation of the fundamentals of antennas and propagation. This student-friendly text also includes simple design procedures along with a large number of examples and exercises.

## **Pharmaceutics-II**

## **Engineering Mathematics**

1 Introduction to Project management 2 Project Planning And Scheduling 3 Project Monitoring And Control 4 Project Economics 5 Project Resources And Safety Aspects 6 Project Appraisal University Question Papers

## **Principles Of Communication**

## **Probability and Combinatorics**

## **Antennas and Wave Propagation**

Distributed Operating Systems will provide engineers, educators, and researchers with an in-depth understanding of the full range of distributed operating systems components. Each chapter addresses de-facto standards, popular technologies, and design principles applicable to a wide variety of systems. Complete with chapter summaries, end-of-chapter exercises and bibliographies, Distributed Operating Systems concludes with a set of case

studies that provide real-world insights into four distributed operating systems.

## **Discrete Structure and Graph Theory**

I-Dispensing Pharmacy - II-Dispensed Medications - a- Monophasic Liquid Dosage Forms - b-Biphasic Liquid Dosage Forms - c- Semi-solid Dosage Forms - III - Sterile Dosage Forms

## **Vlsi Design Technology**

## **Electronics Devices And Circuits**

Designed for a one-semester course in Finite Element Method, this compact and well-organized text presents FEM as a tool to find approximate solutions to differential equations. This provides the student a better perspective on the technique and its wide range of applications. This approach reflects the current trend as the present-day applications range from structures to biomechanics to electromagnetics, unlike in conventional texts that view FEM primarily as an extension of matrix methods of structural analysis. After an introduction and a review of mathematical preliminaries, the book gives a detailed discussion on FEM as a technique for solving differential equations and variational formulation of FEM. This is followed by a lucid presentation of one-dimensional and two-dimensional finite elements and finite element formulation for dynamics. The book concludes with some case studies that focus on

industrial problems and Appendices that include mini-project topics based on near-real-life problems. Postgraduate/Senior undergraduate students of civil, mechanical and aeronautical engineering will find this text extremely useful; it will also appeal to the practising engineers and the teaching community.

## **Electrical Machines**

Principles of Combinational Logic - 1 Definition of combinational logic, Canonical forms, Generation of switching equations from truth tables, Karnaugh maps-3, 4 and 5 variables, Incompletely specified functions (Don't care terms), Simplifying max term equations. Principles of Combinational Logic - 2 Quine-McCluskey minimization technique - Quine-McCluskey using don't care terms, Reduced prime implicant tables, Map entered variables. Analysis and Design of Combinational Logic - I General approach, Decoders-BCD decoders, Encoders. Analysis and Design of Combinational Logic - II Digital multiplexers - Using multiplexers as Boolean function generators, Adders and subtractors - Cascading full adders, Look ahead carry, Binary comparators. Sequential Circuits - 1 Basic bistable element, Latches, SR latch, Application of SR latch, A switch debouncer, The latch, The gated SR latch, The gated D latch, The master-slave flip-flops (Pulse-triggered flip-flops) : The master-slave SR flip-flops, The master-slave JK flip-flop, Edge triggered flip-flop : The positive edge-triggered D flip-flop, Negative-edge triggered D flip-flop. Sequential Circuits - 2 Characteristic equations, Registers, Counters - Binary ripple counters, Synchronous binary

counters, Counters based on shift registers, Design of a synchronous counters, Design of a synchronous Mod-6 counter using clocked JK flip-flops, Design of a synchronous Mod-6 counter using clocked D, T or SR flip-flops. Sequential Design - Introduction, Mealy and Moore models, State machine notation, Synchronous sequential circuit analysis. Sequential Design - Construction of state diagrams, counter design. Lab Experiments

## **Logic Design**

Communication process, Source of information, Communication channels, Base-band and Pass-band signals, Representation of signal and systems, The modulation process, Primary communication resources, Analog versus digital communications. Amplitude modulation Frequency division and time division multiplexing, Suppressed carrier systems, Single side band transmission, Amplitude modulation with carrier power, Effect of frequency and phase errors in synchronous detection, Comparison of various AM systems, Vestigial side band transmission. Angle Modulation Narrow and wide band FM, Multiple frequency and square wave modulation, Linear and Non-linear modulation, Phase modulation, Demodulation of FM signals, Noise reduction. Pulse Modulation Pulse amplitude modulation, Other forms of pulse modulation, Bandwidth required for transmission PAM signals, Comparison of frequency division and Time division multiplexed systems. Noise Different types of noise, Noise calculations, Equivalent noise bandwidth, Noise

figures, Effective noise temperature, Noise figure in cascaded stages. Performance of Communication Systems Noise calculation in communication systems, Noise in amplitude modulated, angle modulated and pulse modulated systems, Comparison of coded and un-coded systems. Information Transmission Measures of information, Channel capacity, transmission of continuous signals, Exchange of bandwidth for signal to noise ratio, Efficiency of PCM systems.

## **Dynamics of Machinery**

In the late 20th century the term sustainable development came to represent an ideal outcome in the sum of all planning goals. Urban planning, design and regulation of the uses of space that focus on the physical form, economic functions, and social impacts of the urban environment and on the location of different activities within it. Because urban planning draws upon engineering, architectural, and social and political concerns. Urban engineering is concerned with the use of land, protection and use of the environment, public welfare, and the design of the urban environment, including air, water, and the infrastructure passing into and out of urban areas such as transportation, communications, and distribution networks. Increasingly, the technology of geographic information systems (GIS) has been used to map the existing urban system and to project the consequences of changes. In the case of underground utility networks, it may also include the civil portion (conduits and access chambers) of the local distribution networks of electrical and

telecommunications services. It can also include the optimizing of garbage collection and bus service networks. Some of these disciplines overlap with other civil engineering specialties, however municipal engineering focuses on the coordination of these infrastructure networks and services, as they are often built simultaneously, and managed by the same municipal authority. Urban Engineering had become a broad discipline embracing many of the responsibilities undertaken by local authorities, including roads, drainage, flood control, coastal engineering, public health, waste management, street cleaning, water supply, sewers, waste water treatment, crematoria, public baths, slum clearance, town planning, public housing, energy supply, parks, leisure facilities, libraries, town halls and other municipal buildings. Methods and Techniques in Urban Engineering, essential for city development and the interest of people for this area of study, deals with urban automation, geographic information systems (GIS), analysis, monitoring and management of urban noise, floods and transports, information technology applied to the cities, tools for urban simulation, social monitoring and control of urban policies, sustainability, etc., demonstrating methods and techniques applied in Urban Engineering.

## **Electromagnetic Field Theory**

The Air Conditioning Manual assists entry-level engineers in the design of air-conditioning systems. It is also usable - in conjunction with fundamental HVAC&R resource material - as a senior- or graduate-



level text for a university course in HVAC system design. The manual was written to fill the void between theory and practice - to bridge the gap between real-world design practices and the theoretical calculations and analytical procedures or on the design of components. This second edition represents an update and revision of the manual. It now features the use of SI units throughout, updated references and the editing of many illustrations. \* Helps engineers quickly come up with a design solution to a required air conditioning system. \* Includes issues from comfort to cooling load calculations. \* New sections on "Green HVAC" systems deal with hot topic of sustainable buildings.

## **Antennas and Wave Propagation**

The book is a collection of high quality peer reviewed research papers presented in Seventh International Conference on Bio-Inspired Computing (BIC-TA 2012) held at ABV-IIITM Gwalior, India. These research papers provide the latest developments in the broad area of "Computational Intelligence". The book discusses wide variety of industrial, engineering and scientific applications of nature/bio-inspired computing and presents invited papers from the inventors/originators of novel computational techniques.

## **Problem Solving and Object Oriented Programming**

Antennas and Wave Propagation is written for the first

course on the same. The book begins with an introduction that discusses the fundamental concepts, notations, representation and principles that govern the field of antennas. A separate chapter on mathematical preliminaries is discussed followed by chapters on every aspect of antennas from Maxwell's equations to antenna array analysis, antenna array synthesis, antenna measurements and wave propagation.

## **Digital Electronics (Digital Logic Design)**

### **Distributed Operating Systems**

The English in Mind Combos offer flexibility in a contemporary English course for teenagers. Each Combo contains eight Student's Book units with the corresponding Workbook material grouped into two modules, and offers approximately 40 to 45 hours of classwork. Clear learning objectives at the beginning of each module, plus 'Check your Progress' sections at the end, help students and teachers plan learning more effectively. There are free Audio CDs/CD-ROMs combining an interactive CD-ROM and audio material. The English in Mind Combos can be used with mixed-ability classes. Combo Starter A is for complete beginners. Combos 1A and 1B are for elementary students; 1A contains a 16-page starter section to review key language. Combos Levels 2A, 2B, 3A and 3B take students from pre-intermediate to intermediate level.

## **Embedded Systems and Robots**

1 Introduction 2 Storage, Collection And Transportation of Municipal Solid waste 3 Disposal of Solid Waste 4 Special Types of Solid Waste 5 Health Aspect and Public Involvement in Solid Waste Management 6 Recycling of Solid Waste

## **Environmental Studies**

Unit I Linear differential equations and applications  
Unit II Laplace and fourier transforms Unit III Statistics And probability Unit IV Vector Differential Calculus  
Unit V Vector integration Unit VI Partial Differential Equations

## **Microcontroller & Applications**

The book takes a unique problem-solving approach, the text successfully integrates current technologies and trends while maintaining an emphasis on the fundamentals - careful analysis of the communication problem, development of an audience-focused solution, and clear, correct use of language and visuals. Salient Features: - Problem-solving approach along with an increased focus on Communication Technologies and Cross-Cultural Communication - Comprehensive pedagogy includes features comprising outlines and checklists, different boxed items, realistic problem-solving case scenarios, and special book-end appendices - Comprehensive adaptation includes features such as culture vignettes, Notes from India, and communication

cases.

## **Engineering Mathematics - III**

Unit I Structure of metals and materials Unit II  
Mechanical behaviours of metal and materials Unit III  
Destructive and non destructive testing Unit IV metals  
corrosions and its prevention Unit V Surface  
Modification methods Unit VI Powder metallurgical  
technology

## **Introduction to Mechatronics and Measurement Systems**

## **TEXTBOOK OF FINITE ELEMENT ANALYSIS**

Electrical Engineering Essence of electricity,  
Conductors, Semiconductors and insulators  
(elementary treatment only); Electric field, electric  
current, Potential and potential difference,  
Electromotive force, Electric power, Ohm's law, Basic  
circuit components, Electromagnetism related laws,  
Magnetic field due to electric current flow, Force on a  
current carrying conductor placed in a magnetic field,  
Faradays laws of electromagnetic induction. Types of  
induced EMF's, Kirchhoff's laws, Simple  
problems. Network Analysis Basic definitions, Types of  
elements, types of sources, Resistive networks,  
Inductive networks, Capacitive networks, Series  
parallel circuits, Star delta and delta star  
transformation, Network theorems-Superposition,  
Thevenin's, Maximum power transfer theorems and

simple problems. Magnetic Circuits Basic definitions, Analogy between electric and magnetic circuits, Magnetization characteristics of Ferro magnetic materials, Self inductance and mutual inductance, Energy in linear magnetic systems, Coils connected in series, Attracting force or electromagnets. Alternating Quantities Principle of ac voltages, Waveforms and basic definitions, Relationship between frequency, Speed and number of poles, Root mean square and average values of alternating currents and voltage, form factor and peak factor, Phasor representation of alternating quantities, The J operator and phasor algebra, analysis of ac circuits with single basic network element, single phase series circuits, Single phase parallel circuits, Single phase series parallel circuits, Power in ac circuits. Transformers Principles of operation, Constructional details, Ideal Transformer and Practical Transformer, Losses, Transformer Test, Efficiency and Regulation Calculations. Direct current machines Principle of operation of dc machines, Armature windings, E.M.F. equation in a dc machine, Torque production in a dc machine, Operation of a dc machine as a generator, Operation of a dc machine as a motor. A.C. Machines Three phase induction motor, principle of operation, Slip and rotor frequency, Torque (simple problems). Synchronous Machines Principle of operation, EMF equation (Simple problems on EMF). Synchronous motor principle and operation (Elementary treatment only) Basic Instrument Classification of instruments, Operating principles, Essential features of measuring instruments, Moving coil permanent magnet (PMMC) instruments, Moving Iron of Ammeters and Voltmeters (elementary treatment only).



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