

---

## Bookmark File PDF Pdf Engineering Communication Bakshi Godse

---

Thank you very much for downloading **Pdf Engineering Communication Bakshi Godse**. As you may know, people have search hundreds times for their favorite readings like this Pdf Engineering Communication Bakshi Godse, but end up in malicious downloads.

Rather than reading a good book with a cup of tea in the afternoon, instead they are facing with some malicious bugs inside their computer.

Pdf Engineering Communication Bakshi Godse is available in our book collection an online access to it is set as public so you can download it instantly.

Our digital library hosts in multiple countries, allowing you to get the most less latency time to download any of our books like this one.

Merely said, the Pdf Engineering Communication Bakshi Godse is universally compatible with any devices to read

---

**KEY=GODSE - CINDY WU**

---

## Supply Chain Strategies and the Engineer-to-Order Approach

**IGI Global** With the rise of global competitiveness among industries, it has become increasingly vital to develop novel strategies to assist in optimizing value-chain networks, thus helping to secure economic success. By employing engineer-to-order practices, many enterprises have improved their manufacturing processes. Supply Chain Strategies and the Engineer-to-Order Approach evaluates innovative processes and original operational models, frameworks, and architectures in the topic areas of industrial engineering and management science. Featuring optimized enterprise chain management strategies and emergent research within the field, this book is an essential reference source for professional, academics, and researchers specializing in enterprise operations and engineer-to-order procedures.

## Analog Communication

Communication / Pulse Modulation Block schematic of Communication System, Base Band Signals and their bandwidth requirements, RF Bands, Types and Communication Channels (Transmission Lines, Parallel Wires, Co-axial Cables, Waveguides and Optical Fiber). Necessity of Modulation, Types of Modulation : AM, FM, PM and Pulse Modulation. Block schematic of PAM, PWM, PPM. Multiplexing : TDM, FDM. Amplitude Modulation Mathematical treatment and expression for AM, Frequency Spectrum, Modulation Index, Power Relation as applied to Sinusoidal Signals, Representation of AM wave, Mathematical treatment as applied to general signals in Communication, Generation of AM using non-linear property. Types of AM Transmitters DSB-FC, DSB-SC, SSB, ISB & VSB, their generation methods and Comparison in terms of Bandwidth and Transmission Power requirements & Complexity (Block diagram treatment only) Angle Modulation Mathematical analysis of FM and PM using Sinusoidal Signals, Frequency spectrum, Mathematical treatment as applied to general non-sinusoidal Signals, Modulation index, Bandwidth requirements (all three relations). Narrowband and Wideband FM, Comparison of FM and PM, Direct and Indirect methods of FM generation, Need for Pre-emphasis, Comparison of AM and FM. AM & FM Receivers Block diagram of AM and FM receivers, Superheterodyne Receiver, Performance characteristics : Sensitivity, Selectivity, Fidelity, Image Frequency Rejection, IFRR, Tracking, De-emphasis, Mixers. AM Detection Envelope detection, Synchronous detection, Practical diode detection, AGC. SSB and DSB detection methods. FM Detection Phase discriminator and Ratio Detector, Mathematical analysis of FM Detection. Noise Sources of Noise, Types of Noise, White Noise, SNR, Noise Figure, Noise Temperature, Friis formula for Noise Figure, Noise Bandwidth, Performance of AM (DSB, SSB & VSB) and FM in presence of Noise : Mathematical treatment Radiation and Propagation Concept of Radiation, Basic Antenna System (Dipole), Antenna parameters, Yagi Antenna. Mechanism of Propagation : Ground Wave, Sky Wave, Space Wave, Duct, Tropospheric Scatter and Extraterrestrial Propagation. Concept of Fading and diversity reception.

## Basic Electronics

# Electronic Circuits-I

## Theory, Analysis and Design

**Technical Publications** The book covers all the aspects of theory, analysis, and design of Electronic Circuits for the undergraduate course. The concepts of biasing of BJT, JFET, MOSFET, along with the analysis of BJT, FET, and MOSFET amplifiers, are explained comprehensively. The frequency response of amplifiers is explained in support. The detailed essential of rectifiers, filters, and power supplies are also incorporated in the book. The book covers biasing of BJT, JFET, and MOSFET and analysis of basic BJT, JFET, and MOSFET amplifiers with Hybrid  $\pi$  equivalent circuits. It also includes the Darlington amplifier discussion, amplifiers using Bootstrap technique, multistage amplifiers, differential amplifiers, and BiCMOS cascade amplifier. The in-depth analysis of the frequency response of various amplifiers is also included in the book. Finally, the book covers all the aspects of rectifiers, types of filters, linear regulators, power supplies, and switching regulators. The book uses straightforward and lucid language to explain each topic. The book provides the logical method of describing the various complicated issues and stepwise methods to make understanding easy. The variety of solved examples is the feature of this book. The book explains the subject's philosophy, which makes understanding the concepts evident and makes the subject more interesting.

## Digital IC Applications

**Technical Publications** The book is written for an undergraduate course on Digital Electronics. The book provides basic concepts, procedures and several relevant examples to help the readers to understand the analysis and design of various digital circuits. The book uses plain and lucid language to explain each topic. A large number of design examples with commercially available SSI and MSI chips is the feature of this book. The book begins with the CMOS, TTL and ECL logic families. It teaches you the analysis and design of combinational and sequential circuits using SSI and MSI chips. It provides in-depth information about multiplexers, de-multiplexers, decoders, encoders, priority encoders, devices for arithmetic operations, multipliers, tri-state devices, comparators, parity circuits, various types of flip-flops, counters and registers. It also covers semiconductor memories and programmable logic devices.

## Basic Electrical Engineering

**S. Chand Publishing** For close to 30 years, "Basic Electrical Engineering" has been the go-to text for students of Electrical Engineering. Emphasis on concepts and clear mathematical derivations, simple language coupled with systematic development of the subject aided by illustrations makes this text a fundamental read on the subject. Divided into 17 chapters, the book covers all the major topics such as DC Circuits, Units of Work, Power and Energy, Magnetic Circuits, fundamentals of AC Circuits and Electrical Instruments and Electrical Measurements in a straightforward manner for students to understand.

## Signals & Systems

**Pearson Educación** New edition of a text intended primarily for the undergraduate courses on the subject which are frequently found in electrical engineering curricula--but the concepts and techniques it covers are also of fundamental importance in other engineering disciplines. The book is structured to develop in parallel the methods of analysis for continuous-time and discrete-time signals and systems, thus allowing exploration of their similarities and differences. Discussion of applications is emphasized, and numerous worked examples are included. Annotation copyrighted by Book News, Inc., Portland, OR

## PULSE AND DIGITAL CIRCUITS

**PHI Learning Pvt. Ltd.** The second edition of this well-received text continues to provide a coherent and comprehensive coverage of Pulse and Digital Circuits, suitable as a textbook for use by undergraduate students pursuing courses in Electrical and Electronics Engineering, Electronics and Communication Engineering, Electronics and Instrumentation Engineering, and Telecommunication Engineering. It presents clear explanations of the operation and analysis of semiconductor pulse circuits. Practical pulse circuit design methods are investigated in detail. The book provides numerous fully worked-out, laboratory-tested examples to give students a solid grounding in the related design concepts. It includes a number of classroom-tested problems to encourage students to apply theory in a

logical fashion. Review questions, fill in the blanks, and multiple choice questions offer the students the opportunity to test their understanding of the text material. This text will be also appropriate for self-study by AMIE and IETE students. NEW TO THIS EDITION : • Includes two new chapters—Logic Gates and Logic Families—to meet the curriculum requirements. • Provides short questions with answers at the end of each chapter. • Presents several new illustrations, examples and exercises

## Analog Electronic Circuits

Diode Circuits Diode resistance, Diode equivalent circuits, Transition and diffusion capacitance, Reverse recovery time, Load line analysis, Rectifiers, Clippers and clampers. Transistor Biasing Operating point, Fixed bias circuits, Emitter stabilized biased circuits, Voltage divider biased, D.C. bias with voltage feedback, Miscellaneous bias configurations, Design operations, Transistor switching networks, PNP transistors, Bias stabilization. Transistor at Low Frequencies BJT transistor modeling, Hybrid equivalent model, CE fixed bias configuration, Voltage divider bias, Emitter follower, CB configuration, Collector feedback configuration, Hybrid equivalent model. Transistor Frequency Response General frequency considerations, Low frequency response, Miller effect capacitance, High frequency response, Multistage frequency effects. General Amplifiers Cascade connections, Cascode connections, Darlington connections. Feedback Amplifier Feedback concept, Feedback connections type, Practical feedback circuits. Power Amplifiers Definitions and amplifier types, Series fed class A amplifier, Transformer coupled class A amplifiers, Class B amplifier operations, Class B amplifier circuits, Amplifier distortions. Oscillators Oscillator operation, Phase shift oscillator, Wienbridge oscillator, Tuned oscillator circuits, Crystal oscillator. FET Amplifiers FET small signal model, Biasing of FET, Common drain common gate configurations, MOSFETs, FET amplifier networks.

## Electromagnetic Field Theory

**Technical Publications** The comprehensive study of electric, magnetic and combined fields is nothing but electromagnetic engineering. Along with electronics, electromagnetics plays an important role in other branches. The book is structured to cover the key aspects of the course Electromagnetic Field Theory for undergraduate students. The knowledge of vector analysis is the base of electromagnetic engineering. Hence book starts with the discussion of vector analysis. Then it introduces the basic concepts of electrostatics such as Coulomb's law, electric field intensity due to various charge distributions, electric flux, electric flux density, Gauss's law, divergence and divergence theorem. The book continues to explain the concept of elementary work done, conservative property, electric potential and potential difference and the energy in the electrostatic fields. The detailed discussion of current density, continuity equation, boundary conditions and various types of capacitors is also included in the book. The book provides the discussion of Poisson's and Laplace's equations and their use in variety of practical applications. The chapter on magnetostatics incorporates the explanation of Biot-Savart's law, Ampere's circuital law and its applications, concept of curl, Stoke's theorem, scalar and vector magnetic potentials. The book also includes the concept of force on a moving charge, force on differential current element and magnetic boundary conditions. The book covers all the details of Faraday's laws, time varying fields, Maxwell's equations and Poynting theorem. Finally, the book provides the detailed study of uniform plane waves including their propagation in free space, perfect dielectrics, lossy dielectrics and good conductors. 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. The variety of solved examples is the feature of this book which helps to inculcate the knowledge of the electromagnetics in the students. Each chapter is well supported with necessary illustrations and self-explanatory diagrams. The book explains the philosophy of the subject which makes the understanding of the concepts very clear and makes the subject more interesting.

## Control System Engineering

**Technical Publications** The book is written for an undergraduate course on the Feedback Control Systems. It provides comprehensive explanation of theory and practice of control system engineering. It elaborates various aspects of time domain and frequency domain analysis and design of control systems. Each chapter starts with the background of the topic. Then it gives the conceptual knowledge about the topic dividing it in various sections and subsections. Each chapter provides the detailed explanation of the topic, practical examples and variety of solved problems. The explanations are given using very simple and lucid language. All the chapters are arranged in a specific sequence which helps to build the understanding of the subject in a logical fashion. The book starts with explaining the various types of control systems. Then it explains how to obtain the mathematical models of various types of systems such as electrical, mechanical, thermal and liquid level systems. Then the book includes good coverage of the block diagram and signal flow graph methods of representing the various systems and the reduction methods to obtain simple system from the analysis point of view. The book further illustrates the steady state and transient analysis of control systems. The book covers the fundamental knowledge of controllers used in practice to optimize the performance of the systems. The book emphasizes the detailed analysis of second order systems as these systems are common in practice and higher order systems can be approximated as second order systems. The book teaches the concept of stability and time domain stability analysis using Routh-Hurwitz method and root locus method. It further explains the fundamentals of frequency domain analysis of the systems including co-relation between time domain and frequency domain. The book gives very simple techniques for stability analysis of the systems in the frequency domain, using Bode plot, Polar plot and Nyquist plot

methods. It also explores the concepts of compensation and design of the control systems in time domain and frequency domain. The classical approach loses the importance of initial conditions in the systems. Thus, the book provides the detailed explanation of modern approach of analysis which is the state variable analysis of the systems including methods of finding the state transition matrix, solution of state equation and the concepts of controllability and observability. The variety of solved examples is the feature of this book which helps to inculcate the knowledge of the design and analysis of the control systems in the students. The book explains the philosophy of the subject which makes the understanding of the concepts very clear and makes the subject more interesting.

## Microprocessors & Microcontrollers

Pentium Microprocessor Historical evolution of 80286, 386 and 486 processors, Pentium features and architecture, Pin description, Functional description, Pentium real mode, Pentium RISC features, Pentium super-scalar architecture - pipelining, Instruction paring rules, Branch prediction, Instruction and data caches The floating-point unit. Bus Cycles and Memory Organisation Initialization and configuration, Bus operations-reset, Non pipelined and pipelined (read and write), Memory organisation and I/O organisation, Data transfer mechanism-8 bit, 16 bit, 32 bit data bus interface. Pentium programming Programmer's model, Register set, Addressing modes, Instruction set, Data types, Data transfer instructions, String instructions, Arithmetic instructions, Logical instructions, Bit manipulation instructions, Program transfer instructions and Processor control instructions. Protected Mode Introduction, Segmentation-support registers, Related instructions descriptors, Memory management through segmentation, Logical to linear address translation, Protection by segmentation, Privilege level-protection, Related instructions, Inter-privilege level transfer of control, Paging-support registers, descriptors, Linear to physical address translation, TLB, Page level protection, Virtual memory. Multitasking, Interrupts Exceptions and I/O Multitasking - Support registers, Related descriptors, Task switching, I/O Permission bit map. Virtual mode - features, Address generation, Privilege level, Instructions and registers available, entering and leaving V86 mode. Interrupt structure - Real, Protected and Virtual 8086 modes, I/O handling in Pentium, Comparison of all three modes. 8051 Micro-controller Micro-controller MCS-51 family architecture, On-chip data memory and program memory organization - Register set, Register bank, SFRs, External data memory and program memory, Interrupts structure, Timers and their programming, Serial port and programming, Other features, Design of minimum system using 8051 micro-controller for various applications. PIC Micro-controller Overview and features of PIC16C, PIC 16F8XX, Pin diagram, Capture mode, Compare mode, PWM mode, Block diagram, Programmer's model PIC, Reset and clocking. Memory organization - program memory, data memory, Flash, EEPROM, PIC 16F8XX addressing modes, Instruction set, programming, I/O ports, Interrupts, Timers, ADC.

## Linear Integrated Circuits And Applications

Differential Amplifiers Analysis of differential amplifier, common mode and differential mode gains, transfer characteristics, CMRR, I/P and O/P impedances, high performance amplifiers using current source bias and current mirror connection. Drift Problem Thermal drift, input error signals and their compensation in differential amplifier. Operational Amplifier Ideal op-amp characteristics, cascading of differential amplifier. I/P, O/P stages and level translators, multistage op-amps, frequency response and stability. Frequency and phase compensation techniques. Some commercial op-amp parameters, features (IC 741, MC 1530). Op-amp Applications Inverting and non-inverting, differential and bridge amplifiers, summer, integrator, differentiator. V to I and I to V converters, op-amp feedback limiters using diodes, zener diodes, log and antilog amplifiers, analog multipliers, dividers, sample and hold circuits. Peak detectors, precision rectifiers, instrumentation amplifier, monostable and astable multivibrators, comparators-Schmitt trigger using op-amp. Active Filters First and second order Butterworth filters, design and its response (LP, HP, BP, BE, Narrow band, all pass filters). Timers Basic timer circuit 555 timer used as astable and monostable multivibrator. Data Converters and Data Acquisition System D/A converters, basic D/A converter, weighted binary type, ladder R-2R D/A converters, performance parameters and source of errors. A/D Converters Basic V/F converter, V/T converter, single slope and dual slope converter. A/D converter using D/A converter, counter ramp, continuous counter ramp, successive approximation, flash converter. Communication Amplifications Cascade amplifiers MC1550 for video, RF and amplitude modulation, AGC application, PLL, brief study of PLL system, applications of PLL for AM, FM detection, FSK decoder, frequency synthesis using commercial PLL (IC 565). Voltage Regulators Analysis and design of series and shunt regulators using DC amplifiers, some commercial voltage regulators (MC 78XX series, IC 723), high current negative voltage with foldback limiting concepts, switching regulators - basic concepts and applications.

## Electrical Machines - I

**Technical Publications** 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.

## Analog Electronics

Basic definition, Ideal and practical voltage and current sources, Dependent and independent voltage and current sources, Linear, Unilateral, Bilateral networks. Loop and Node Analysis (DC and AC). Network Theorems (AC and DC) (Including controlled sources) Superposition, Thevenin's and Norton's and Maximum power theorem, Principle of duality. Transistor at Low Frequencies Analysis of an amplifier using h-parameters  $A_i$ ,  $R_i$ ,  $A_v$ ,  $A_{vs}$ ,  $A_{is}$ ,  $R_o$ , CE, CB, CC configurations, Miller's theorem, Miller's Dual theorem. Transistor at High Frequencies CE hybrid P-model, Significance, CE short circuit current gain and current gain with resistive load. Cascade Configurations CE-CE, CE-CB, CE-CC, CC-CC (Darlington pair), Bootstrapping, Emitter coupled differential amplifier (DC analysis and AC analysis for  $A_d$ , AC and CMRR using h-parameters), Square wave testing. Large signal amplifier Class A - Direct coupled, Transformer coupled, Class A push-pull, Harmonic distortion. FET Biasing JFET and MOSFET biasing (Q point). Low frequency analysis CS configurations. Feedback Amplifier Classification, Block diagram of general feedback concept (Negative), Relation between AF and A, Block diagram of A feedback amplifier topologies, General characteristics and advantages of negative feedback amplifier. Oscillator Barkhausen criterion, Phase shift oscillator, Wien bridge oscillator, Collpits oscillator, Hartley oscillator, Clapp oscillator (no derivations). Voltage Regulators Performance parameters of regulators; Zener shunt, Transistor shunt, Emitter follower type series regulator and controlled transistor regulators. (Analysis of  $S_v$  and  $R_o$ ). Protection Circuits Short-circuit protection, Current limiting and foldback current limiting. IC Regulators Block diagram of 3 PIN IC regulators, LM317, 340 for fixed voltage, Adjustable output and current regulator IC 723 for low voltage and high voltage as well as current boosting. SMPS and UPS (Block diagram and working only).

## Statistical Physics for Electrical Engineering

**Springer** The main body of this book is devoted to statistical physics, whereas much less emphasis is given to thermodynamics. In particular, the idea is to present the most important outcomes of thermodynamics - most notably, the laws of thermodynamics - as conclusions from derivations in statistical physics. Special emphasis is on subjects that are vital to engineering education. These include, first of all, quantum statistics, like the Fermi-Dirac distribution, as well as diffusion processes, both of which are fundamental to a sound understanding of semiconductor devices. Another important issue for electrical engineering students is understanding of the mechanisms of noise generation and stochastic dynamics in physical systems, most notably in electric circuitry. Accordingly, the fluctuation-dissipation theorem of statistical mechanics, which is the theoretical basis for understanding thermal noise processes in systems, is presented from a signals-and-systems point of view, in a way that is readily accessible for engineering students and in relation with other courses in the electrical engineering curriculum, like courses on random processes.

## Microprocessor and Interfacing

**Technical Publications** The book provides comprehensive coverage of the hardware and software aspects of the 8085 microprocessor. It also introduces advanced processors from Intel family, SUN SPARC microprocessor and ARM Processor. The book teaches you the 8085 architecture, instruction set, machine cycles and timing diagrams, Assembly Language Programming (ALP), Interrupts, interfacing 8085 with support chips, memory and peripheral ICs - 8255 and 8259. The book explains the features, architecture, memory addressing, operating modes, addressing modes of Intel 8086, 80286, 80386 microprocessors, segmentation, paging and protection mechanism provided by 80386 microprocessor and the features of 80486 and Pentium Processors. It also explains the architecture of SUN SPARC microprocessor and ARM Processor.

## Digital Systems Design

**Bookboon**

## Analog and Mixed-Signal Electronics

**John Wiley & Sons** A practical guide to analog and mixed-signal electronics, with an emphasis on design problems and applications This book provides an in-depth coverage of essential analog and mixed-signal topics such as power amplifiers, active filters, noise and dynamic range, analog-to-digital and digital-to-analog conversion techniques, phase-locked loops, and switching power supplies. Readers will learn the basics of linear systems, types of nonlinearities and their effects, op-amp circuits, the high-gain analog filter-amplifier, and signal generation. The author uses system design examples to motivate theoretical explanations and covers system-level topics not found in most textbooks. Provides references for further study and problems at the end of each chapter Includes an appendix describing test equipment useful for analog and mixed-signal work Examines the basics of linear systems, types of nonlinearities and their effects, op-amp circuits, the high-gain analog filter-amplifier, and signal generation Comprehensive and detailed, Analog and Mixed-Signal Electronics is a great introduction to analog and mixed-signal electronics for EE undergraduates, advanced electronics students, and for those involved in computer engineering, biomedical engineering, computer science, and physics.

## Engineering Surveying

**CRC Press** Engineering surveying involves determining the position of natural and man-made features on or beneath the Earth's surface and utilizing these features in the planning, design and construction of works. It is a critical part of any engineering project. Without an accurate understanding of the size, shape and nature of the site the project risks expensive and time-consuming errors or even catastrophic failure. This fully updated sixth edition of Engineering Surveying covers all the basic principles and practice of the fundamentals such as vertical control, distance, angles and position right through to the most modern technologies. It includes: \* An introduction to geodesy to facilitate greater understanding of satellite systems \* A fully updated chapter on GPS, GLONASS and GALILEO for satellite positioning in surveying \* All new chapter on the important subject of rigorous estimation of control coordinates \* Detailed material on mass data methods of photogrammetry and laser scanning and the role of inertial technology in them With many worked examples and illustrations of tools and techniques, it suits students and professionals alike involved in surveying, civil, structural and mining engineering, and related areas such as geography and mapping.

## Digital Electronics

### Introduction to Digital Electronics

**Elsevier** This text takes the student from the very basics of digital electronics to an introduction of state-of-the-art techniques used in the field. It is ideal for any engineering or science student who wishes to study the subject from its basic principles as well as serving as a guide to more advanced topics for readers already familiar with the subject. The coverage is sufficiently in-depth to allow the reader to progress smoothly onto higher level texts.

## Modern Control Theory

**Technical Publications** The book is written for an undergraduate course on the Modern Control Systems. It provides comprehensive explanation of state variable analysis of linear control systems and analysis of nonlinear control systems. Each chapter starts with the background of the topic. Then it gives the conceptual knowledge about the topic dividing it in various sections and subsections. Each chapter provides the detailed explanation of the topic, practical examples and variety of solved problems. The book explains the philosophy of the subject which makes the understanding of the concepts very clear and makes the subject more interesting. The book starts with explaining the concept of state variable and state model of linear control systems. Then it explains how to obtain the state models of various types of systems using phase variables, canonical variables, Jordan's canonical form and cascade programming. Then the book includes good coverage of the matrix algebra including eigen values, eigen vectors, modal matrix and diagonalization. It also includes the derivation of transfer function of the system from its state model. The book further explains the solution of state equations including the concept of state transition matrix. It also includes the various methods of obtaining the state transition matrix such as Laplace transform method, Power series method, Cayley Hamilton method and Similarity transformation method. It further includes the detailed discussion of controllability and observability of systems. It also provides the discussion of pole placement technique of system design. The book teaches various types of nonlinearities and the nonlinear systems. The book covers the fundamental knowledge of analysis of nonlinear systems using phase plane method, isocline method and delta method. Finally, it explains stability analysis of nonlinear systems and Liapunov's stability analysis.

# Mechanical Engineering

## Handbook For Formulas (GATE, ESE, SSC JE and Other Competitive Exams)

**Independently Published** A handbook of Mechanical Engineering For Formulas "Mechanical Engineering Formulas - all subjects formulas with concepts and course outlines are given here. Select your desired course and you can revise all the Formulas within an hour only. When you are a mechanical engineer, you need to know the important formulas during the competitive exams like GATE, ESE and other exams to solve the answers easily using the formula. So, you must know the all-important formulas in the mechanical engineering Subjects. This book is specially prepared for mechanical engineers". Topics Inside Book Si multiples Basic units (distance, area, volume, mass, density) Thermodynamics Thermal engineering Heat transfer Fluid mechanics Strength of materials Theory of machines Machine design Manufacturing Industrial engineering Get the free kindle version of this book by purchasing the Paperback.!

## Operational Amplifiers

**Elsevier** Operational Amplifiers, Second Edition, provides a more comprehensive coverage of known modes of operational amplifier action. Greater emphasis is given to the factors influencing the performance limitations of practical circuits to make the book immediately useful to the ever increasing number of operational amplifier users. The book begins with a preliminary introduction to the capabilities of operational amplifiers. It then explains the significance of the performance parameters of practical amplifiers and describes amplifier testing procedures. Separate chapters illustrate the commonly used modes of operation for an operational amplifier. These include applications in basic scaling circuits, nonlinear circuits, and integrators and differentiators. The final chapter provides a resume and an overview of the practical considerations which the designer must take into account in order to exploit fully the operational amplifier approach to electronic instrumentation. This book is intended for both the user and the potential user of operational amplifiers and as such it should prove equally valuable to both the undergraduate student and the practicing engineer in the measurement sciences.

## IoT Fundamentals

## Networking Technologies, Protocols, and Use Cases for the Internet of Things

**Cisco Press** Today, billions of devices are Internet-connected, IoT standards and protocols are stabilizing, and technical professionals must increasingly solve real problems with IoT technologies. Now, five leading Cisco IoT experts present the first comprehensive, practical reference for making IoT work. IoT Fundamentals brings together knowledge previously available only in white papers, standards documents, and other hard-to-find sources—or nowhere at all. The authors begin with a high-level overview of IoT and introduce key concepts needed to successfully design IoT solutions. Next, they walk through each key technology, protocol, and technical building block that combine into complete IoT solutions. Building on these essentials, they present several detailed use cases, including manufacturing, energy, utilities, smart+connected cities, transportation, mining, and public safety. Whatever your role or existing infrastructure, you'll gain deep insight what IoT applications can do, and what it takes to deliver them. Fully covers the principles and components of next-generation wireless networks built with Cisco IOT solutions such as IEEE 802.11 (Wi-Fi), IEEE 802.15.4-2015 (Mesh), and LoRaWAN Brings together real-world tips, insights, and best practices for designing and implementing next-generation wireless networks Presents start-to-finish configuration examples for common deployment scenarios Reflects the extensive first-hand experience of Cisco experts

## Electrical Measurements and Instrumentation

**Technical Publications** The importance of measuring instruments and transducers is well known in the various engineering fields. The book provides comprehensive coverage of various electrical and electronic measuring instruments, transducers, data acquisition system, storage and display devices . The book starts with explaining the theory of measurement including characteristics of instruments, classification, standards, statistical analysis and limiting errors. Then the book explains the various electrical and electronic instruments such as PMMC, moving iron, electro-dynamometer type, energy meter, wattmeter, digital voltmeters and multimeters. It also includes the discussion of various magnetic measurements, instrument transformers, power factor meters, frequency meters, phase meters

and synchros. The book further explains d.c. and a.c. potentiometers and their applications. The book teaches various d.c. and a.c. bridges along with necessary derivations and phasor diagrams. The book incorporates the various storage and display devices such as, recorders, plotters, printers, oscilloscopes, LED, LCDs and dot matrix displays. The chapter on transducers is dedicated to the detailed discussion of various types of transducers such as resistive, capacitive, strain gauges, RTD, thermistors, inductive, LVDT, thermocouples, piezoelectric, photoelectric and digital transducers. It also adds the discussion of optical fiber sensors. The book also includes good coverage of data acquisition system, data loggers, DACs and ADCs. Each chapter starts with the background of the topic. Then it gives the conceptual knowledge about the topic dividing it in various sections and subsections. Each chapter provides the detailed explanation of the topic, practical examples and variety of solved problems. The book explains the philosophy of the subject which makes the understanding of the concepts very clear and makes the subject more interesting.

## Schaum's Outline of Electronic Devices and Circuits, Second Edition

**McGraw Hill Professional** This updated version of its internationally popular predecessor provides an introductory problem-solved text for understanding fundamental concepts of electronic devices, their design, and their circuitry. Providing an interface with Pspice, the most widely used program in electronics, new key features include a new chapter presenting the basics of switched mode power supplies, thirty-one new examples, and twenty-three PS solved problems.

## A Textbook of Strength of Materials

(in S.I. Units)

**Laxmi Publications**

## Radio Frequency Modulation Made Easy

**Springer** This book introduces Radio Frequency Modulation to a broad audience. The author blends theory and practice to bring readers up-to-date in key concepts, underlying principles and practical applications of wireless communications. The presentation is designed to be easily accessible, minimizing mathematics and maximizing visuals.

## Fundamentals of Signals and Systems

**Charles River Media** This book is a self-contained introduction to the theory of signals and systems, which lies at the basis of many areas of electrical and computer engineering. In the seventy short lectures, formatted to facilitate self-learning and to provide easy reference, the book covers such topics as linear time-invariant (LTI) systems, the Fourier transform, the Laplace Transform and its application to LTI differential systems, state-space systems, the z-transform, signal analysis using MATLAB, and the application of transform techniques to communication systems. A wide array of technologies, including feedback control, analog and discrete-time filters, modulation, and sampling systems are discussed in connection with their basis in signals and systems theory. The accompanying CD-ROM includes applets, source code, sample examinations, and exercises with selected solutions.

## Digital Communications

**Technical Publications** There are eight chapters, useful appendix and solved question papers in the book. Basic digital communication, line codes and sampling methods are presented at the beginning. Digital pulse modulation techniques such as PCM, DPCM, DM, ADM are presented. Continuous wave digital modulation methods such as BPSK, DPSK, QPSK, QAM, BFSK and OOK are presented with mathematical analysis of modulators and receivers. Issues related to baseband transmission such as ISI, Nyquist pulse shaping criterion, optimum reception, matched filter and eye patterns are also discussed. Concepts of information theory such as discrete memoryless channels, mutual information, Shannon's theorems on source coding are also presented. Coding using linear block codes, cyclic codes and convolutional coding is also discussed. Secured communication using spread spectrum modulation is also discussed in detail.

## Basic Electricity

## Principles Of Control Systems

Open loop and closed loop systems, Servomechanism, Basic structure of a feedback control system. Dynamic Models and Responses Dynamic model of an RLC network, State variable model, Impulse response model, Transfer function model, Standard test/disturbance signals and their models, Transfer function model and dynamic response of a second order electrical system. Control System Components Basic units of feedback control system, Reduction of system block diagrams, Signal flow graph, Mason's gain rule, Block diagram reduction using Mason's gain rule, Operational amplifier used as an error detector, Servo potentiometer, DC and AC servomotors, Tachogenerator, Stepper motor, Synchros, Block diagram model of a typical control system using simplified sub-system, Transfer function blocks. Feedback Control System Characteristics Stability, Sensitivity, Disturbance rejection, Steady state accuracy, Transient and steady state responses of a second order system, Effect of additional zeros and poles, Desired closed loop pole locations and dominant poles, Steady state error constants, System type numbers and error compensation. System Stability Analysis and Compensator Design System stability bounds, Routh stability criterion, Relative stability and range of stability, Root locus concept, System characteristic equation, Plotting root loci, Design of cascade lag-lead compensation, Minor loop (rate) feedback compensation. Nyquist Criterion and Stability Margins Nyquist stability criterions, Nyquist plot, Gain and phase margins, Bode plot of magnitude and phase and determination of stability margins. Feedback System Performance Performance specifications in frequency domain, Correlation between frequency domain and time domain specifications, Constant - M circles, Nichols chart, Stability margins from sensitivity function. Design of cascade lag-lead compensation using Bode plot. Minor loop (rate) feedback compensation.

## Electronic Devices and Circuits

## SWITCHING THEORY AND LOGIC DESIGN

**PHI Learning Pvt. Ltd.** This comprehensive text on switching theory and logic design is designed for the undergraduate students of electronics and communication engineering, electrical and electronics engineering, electronics and instrumentation engineering, telecommunication engineering, computer science and engineering, and information technology. It will also be useful to AMIE, IETE and diploma students. Written in a student-friendly style, this book, now in its Second Edition, provides an in-depth knowledge of switching theory and the design techniques of digital circuits. Striking a balance between theory and practice, it covers topics ranging from number systems, binary codes, logic gates and Boolean algebra to minimization using K-maps and tabular method, design of combinational logic circuits, synchronous and asynchronous sequential circuits, and algorithmic state machines. The book discusses threshold gates and programmable logic devices (PLDs). In addition, it elaborates on flip-flops and shift registers. Each chapter includes several fully worked-out examples so that the students get a thorough grounding in related design concepts. Short questions with answers, review questions, fill in the blanks, multiple choice questions and problems are provided at the end of each chapter. These help the students test their level of understanding of the subject and prepare for examinations confidently. NEW TO THIS EDITION • VHDL programs at the end of each chapter • Complete answers with figures • Several new problems with answers

## Optical and Wireless Communications

## Next Generation Networks

**CRC Press** Optical and wireless technologies are being introduced into the global communications infrastructure at an astonishing pace. Both are revolutionizing the industry and will undoubtedly dominate its future, yet in the crowded curricula in most electrical engineering programs, there is no room in typical data communications courses for proper coverage of these "next generation" technologies. Optical and Wireless Communications: Next Generation Networks covers both types of networks in a unique presentation designed for a one-semester course for senior undergraduate or graduate engineering students. Part I: Optical Networks covers optical fibers, transmitters, receivers, multiplexers, amplifiers, and specific networks, including FDDI, SONET, fiber channel, and wavelength-routed networks. Part II: Wireless Networks examines fundamental concepts and specific wireless networks, such as LAN, ATM, wireless local loop, and wireless PBXs. This section also explores cellular technologies and satellite communications. Eventually, next generation networks will be as ubiquitous as traditional telephone networks, and today's engineering students must be prepared to meet the

challenges of optical and wireless systems development and deployment. Filled with illustrations, examples, and end-of-chapter problems, *Optical and Wireless Communications: Next Generation Networks* provides a brief but comprehensive introduction to these technologies that will help future engineers build the foundation they need for success.

## Biomedical Instrumentation: Technology and Applications

**McGraw Hill Professional** One of the most comprehensive books in the field, this import from TATA McGraw-Hill rigorously covers the latest developments in medical imaging systems, gamma camera, PET camera, SPECT camera and lithotripsy technology. Written for working engineers, technicians, and graduate students, the book includes of hundreds of images as well as detailed working instructions for the newest and more popular instruments used by biomedical engineers today.

## Microelectronic Circuits

## Analysis and Design

## Fundamentals of Logic Design

Updated with modern coverage, a streamlined presentation, and an excellent companion CD, this sixth edition achieves yet again an unmatched balance between theory and application. Authors Charles H. Roth, Jr. and Larry L. Kinney carefully present the theory that is necessary for understanding the fundamental concepts of logic design while not overwhelming students with the mathematics of switching theory. Divided into 20 easy-to-grasp study units, the book covers such fundamental concepts as Boolean algebra, logic gates design, flip-flops, and state machines. By combining flip-flops with networks of logic gates, students will learn to design counters, adders, sequence detectors, and simple digital systems. After covering the basics, this text presents modern design techniques using programmable logic devices and the VHDL hardware description language.