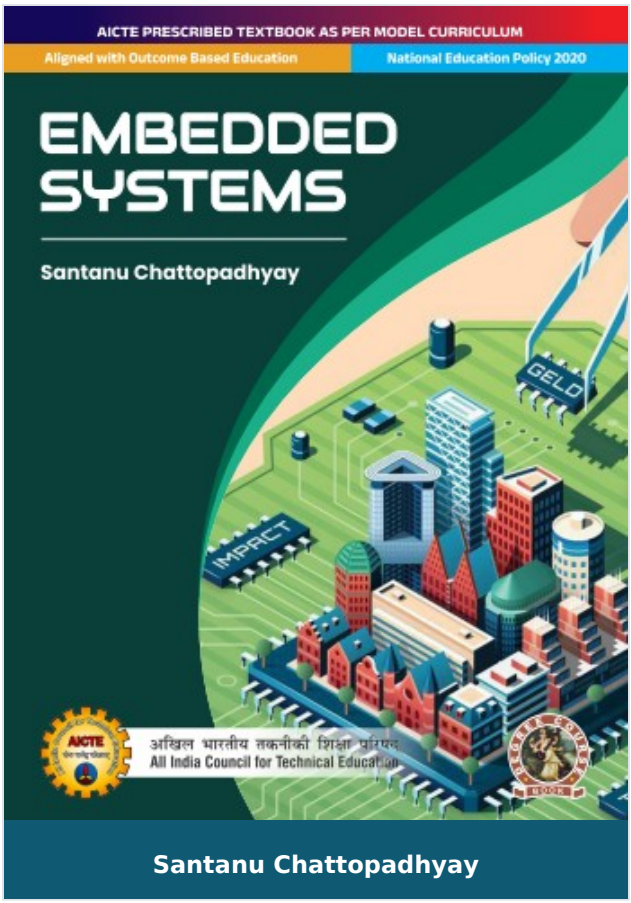

Embedded Systems

Author :	Santanu Chattopadhyay
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Product Description

Embedded Systems

This book is designed for the course on Embedded Systems. It begins with the discussion on basics of embedded system and its features. The host processors, generally used in an embedded system design have been enumerated. In the process, the ARM processor, Digital Signal Processor, FPGA and ASIC have been introduced. Special types of interfacing standards are employed to connect devices to the processor. Non-conventional interfacing standards used in embedded systems like SPI, I2C, RS-232, USB, IrDA, CAN and Bluetooth have been discussed. ADCs and DACs are used for interacting with the analog world. Buses like PCIe and AMBA are employed for developing a complete system. For larger embedded applications, Real-Time Operating Systems (RTOS) are used to realize and schedule the processes, along with their resource requirements. The language Embedded C has become the de facto standard for realizing embedded system programs. The language has been introduced with a large number of example programs. In order to keep the cost of an embedded system less while satisfying the area, performance and power constraints, it becomes necessary to partition an embedded application into set of modules which are realized either in software or in hardware. Hardware-software co-design and co-simulation techniques are employed to achieve the same. The book gives the readers a good understanding of all these topics. A good number of examples, exercises and references act as the starting point to the domain of Embedded Systems.

Salient features:

- Covers embedded processors – ARM, DSP, FPGA, ASIC.
- Discusses special interfacing standards for embedded systems – SPI, I2C, CAN, USB, Bluetooth.

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- Enumerates the essentials of RTOS and embedded programming.
- Presents hardware-software cosimulation and codesign techniques.

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- Interfacing
- Real-time system design
- Embedded programming
- Hardware-software codesign
- CO and PO Attainment Table
- EC – 21 Embedded Systems Laboratory
- Index

Author

Santanu Chattopadhyay

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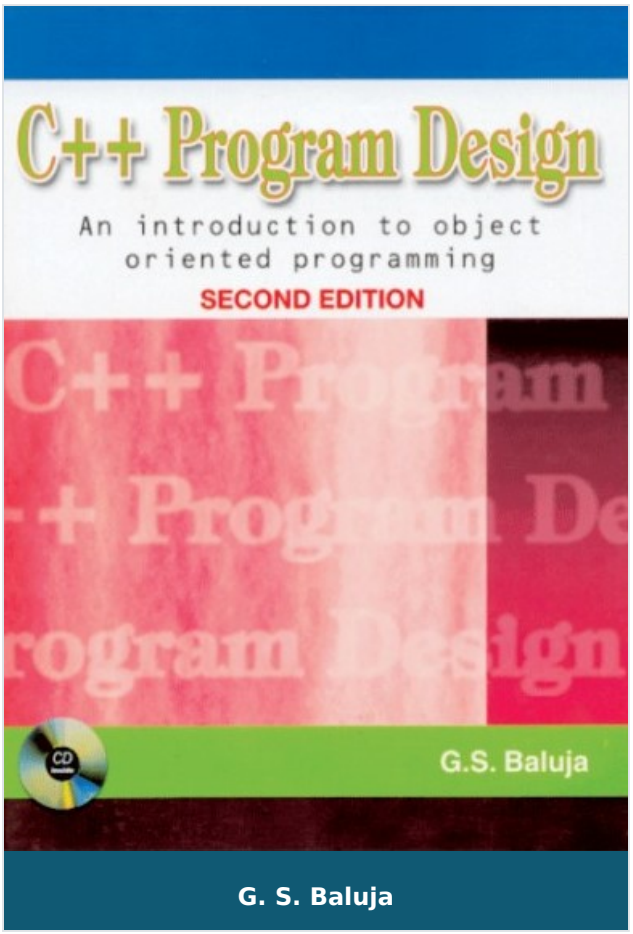

C++ Program Design

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Product Description

This book is a unique book valuable for beginners, intermediate and advance users. It is written with several goals in mind. It is designed to provide all the essential information you'll need to learn and master C++. It presents the basic to advance features of C++ in the context of procedural, genetic and object oriented programming. It contains a rich collection of examples, solved problems and exercises drawn from many fields to provide the reader with a chance to solve interesting real world problems. The plus point of this book is, its detail coverage of all the major features of C++ including new additions like standard temple library. exception handling, graphic and data structures. With this one book you can master the language in quick time.

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- Object Oriented Programming- Part II
- Inheritance
- Virtual Functions and Polymorphism
- Function and Operator Overloading
- Templates and Exception Handling
- File Handing
- Graphics In C++
- Data Structure in C++

Author

G. S. Baluja

G. S. Baluja Gurvinder Singh Baluja: Mr. Gurvinder Singh is a teacher, trainer and consultant in the field of information technology. He holds a B.E. in Computer Science and Engineering. Currently the acting H.O.D. of GTBPI Vasant Vihar, New Delhi, and he is doing M. Tech (Part Time) in Computer Application from I.I.T. Delhi, already an author of

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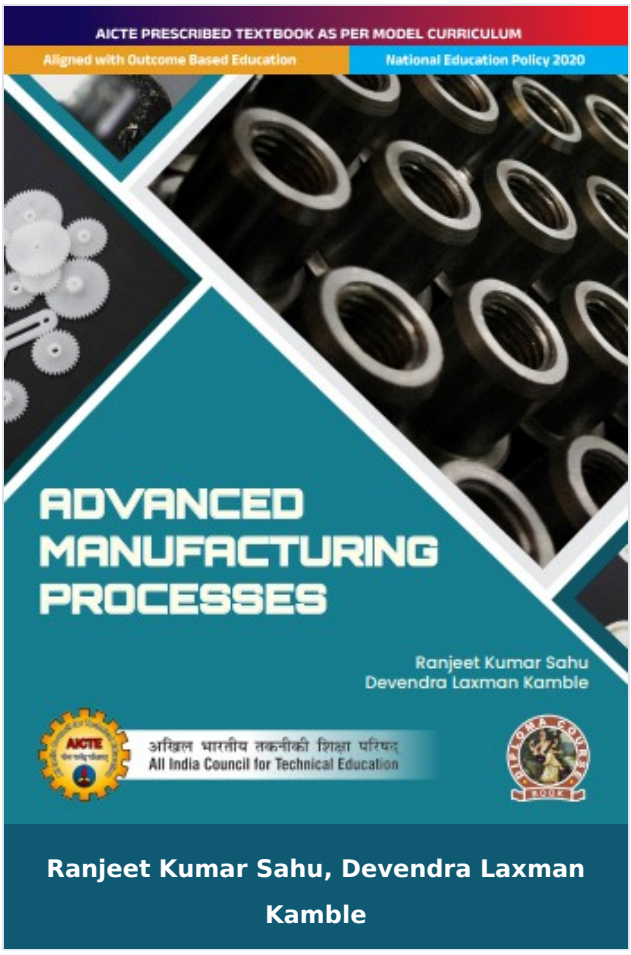

Advanced Manufacturing Processes

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Product Description

Advanced Manufacturing Processes

The course Advanced Manufacturing Processes provides a fundamental knowledge on work and tool holding devices, machines and tools for processing of materials, and of the scientific principles behind modern processes. The course is presented in five units. Unit 1 deals with the jigs and Fixture; Unit 2 focuses on jig boring and plastic processing; Unit 3 covers modern machining processes; Unit 4 CNC Milling Machines and machine Tool Automation; and Unit 5 deals with special purpose machines and maintenance of machine Tools. All unit in the book provide the objectives of the study and expectations from the students in exercising OBE. This book is designed to serve as a valuable resource, offering both theoretical knowledge and practical guidance, so that the reader can realize the course effectively.

Salient Features:

- The content of the book is aligned with the mapping of course outcomes, programs outcomes and unit outcomes
- Both the student and teacher-centric subject materials are included in the book in a balanced and chronological manner.
- All figures, tables, and others are inserted to improve the clarity of the topic.
- Discussion on each unit helps the overall view of the chapter and helps in answering exercise questions.
- The book provides a lot of information and QR codes for E-resources.
- Explanations with underlying principles and detailed knowledge on machine tools and processes involved are the basics for the course Advanced Manufacturing Processes and, therefore, presented in a systemic way.

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- Modern machining processes
- Machining center
- Special purpose machines (SPMs)
- Bibliography
- Appendix
- CO and PO attainment Table
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Author

Ranjeet Kumar Sahu

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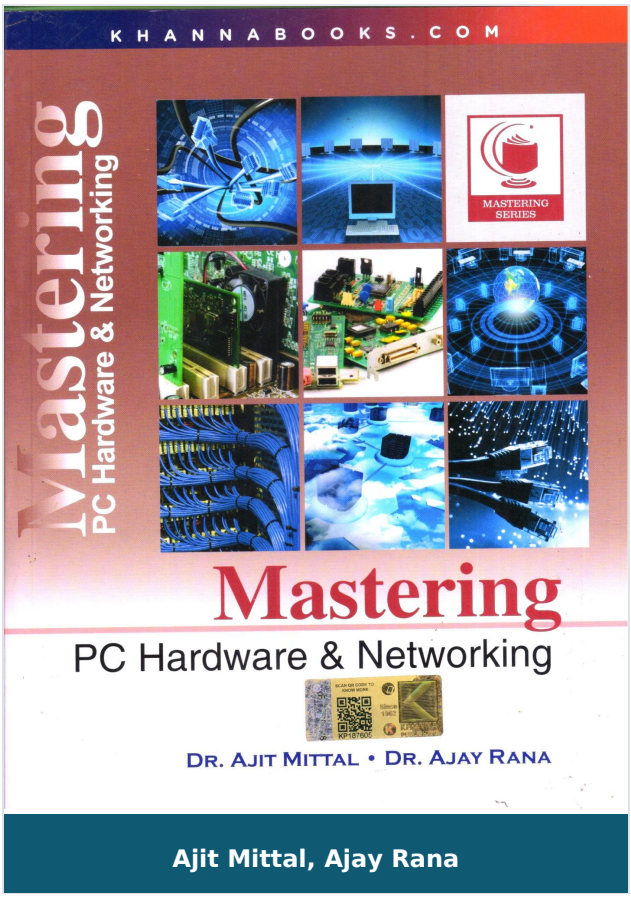

Mastering PC Hardware & Networking

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Product Description

Hardware and networking from the basic cores of the computer knowledge, not only for the users but also for the people who are there to take care of the computer system. They are the ones who would become Hardware Engineers. Networking is another important aspect of the computer system. In fact, it forms the base for internet. In this book various aspects of networking are covered. Starting from various types of topologies, it goes on to trace the security, architecture, connectivity and administration, etc. The book ends up with a chapter on wireless networking.

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- Network Architecture
- Network Connectivity
- Network Administration Security
- Wireless Networking

Author

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Ajay Rana

Dr. Ajay Rana Professor, Department of Computer Science & Engineering Dean and Director, Amity University 30+ patents under his name in the field of IoT, Network & Sensors 279+ Research publications Co-authored 6 Books Completed 30 Sponsored Research Projects Senior member, Academic Council & Executive Council, Amity University Strong corporate connect

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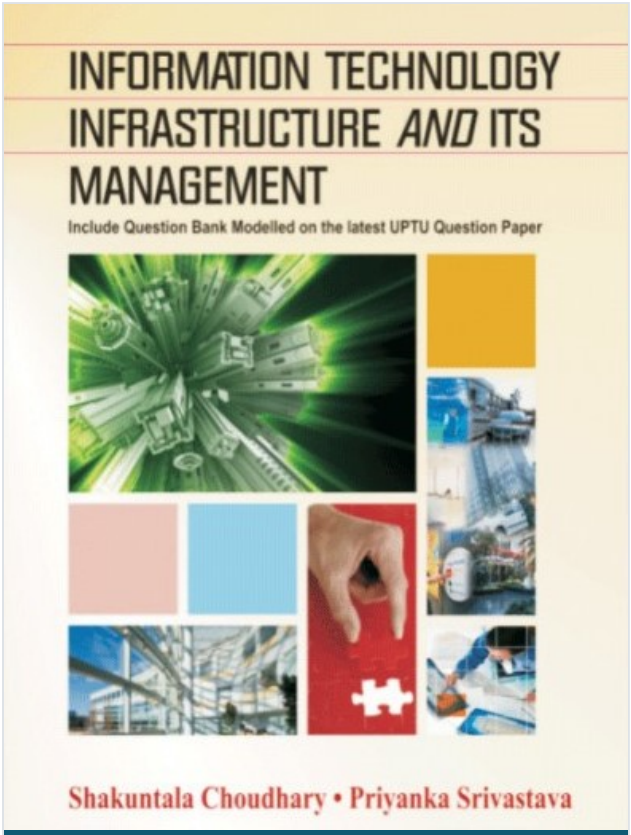

Shakuntala Choudhary, Priyanka Srivastava

Information Technology Infrastructure & Its Management

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Product Description

This book is specially designed to serve as a textbook for undergraduate students of engineering at Uttar Pradesh Technical University (UPTU), This subject has been introduced for the first time in UP technical University. We have tried our best to cover the whole syllabus. Throughout the text, it has been our Endeavour to keep the explanations and definitions as lucid as possible. This book is written exclusively with students in mind. The language in user-friendly and conductive to learning. Though every attempt has been made to avoid and check error, we will be grateful to readers if they can point out any that may have crept in inadvertently.

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- Service Delivery Process
- Service Support and Storage Management
- Security Management
- IT Ethics and Emerging Trends
- Question Bank

Author

Shakuntala Choudhary

Shakuntala Choudhary has completed his Bachelor of Engineering & M. Tech. in Computer Science & Engg. She started her teaching career in an Engineering Education from Sri Balaji College of Engineering and Technology, Jaipur, India. And worked their as HOD of IT Department. She also served in Dronacharya College of Engineering Gurgaon. Presently she is working in Bansal Institute of Engineering & Technology, Lucknow. She has rich experience in teaching for various subject like Automata, Analysis of Algorithms, Discrete Mathematics and IT Infrastructure. She had certified by ""Faculty Enable Programme"" (FEP) at INFOSYS, Chandigarh. She has published 3 - Vol of a technical magazine ""EPISTLE"" She has published various National level technical papers and Attended various Conferences. "

Priyanka Srivastava

Priyanka Srivastava has completed his B.Tech in Information Technology & MBA (IT) from ICFAI University. She started her teaching career in engineering education from Dr. M.C. Saxena College of Engineering & Technology, Lucknow. Presently she is working as a Faculty in Bansal Institute of Engineering & Technology, Lucknow. She attended various

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national level Seminars and Workshops. She has experience in teaching for various subjects like C-Programming, Web Technology, Database Management and IT Insfrastructure Management.

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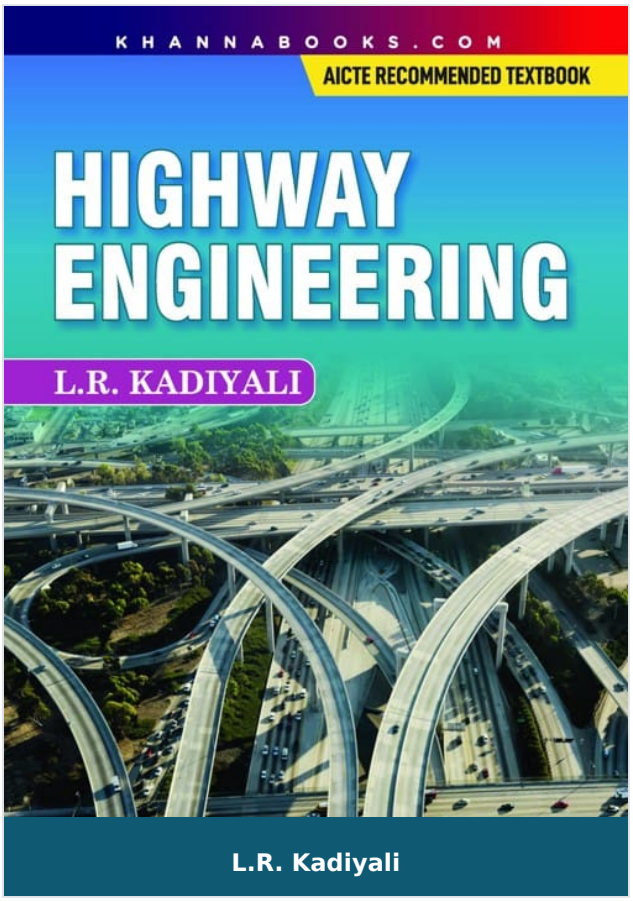

Highway Engineering

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Product Description

This book on Highway Engineering shall be useful for B.E./B. Tech & M.E/ M. Tech students of Civil Engineering. It shall also be useful for practicing Engineering and designers.

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- Highway Maintenance
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- Overlay Design and construction
- Use of Geosynthetics
- Environmental, Landscaping and Arboriculture
- Airport Engineering

Author

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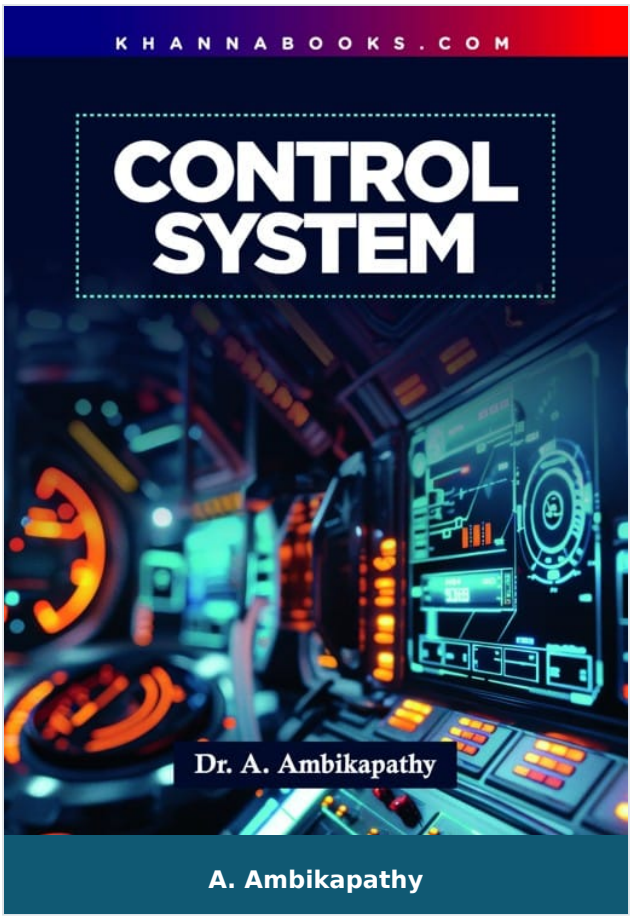

A. Ambikapathy

Control System

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Product Description

The textbook on Control System tells about the basic concepts of control system in a detailed manner. This book contains the brief explanation about block diagram reduction, signal flow graph and time domain analysis. The techniques which are used in control system such as root locus, bode plot and polar plots are explained in detail. designing procedures for the compensators (Lag, lead and lag lead) are given in easy manner and steady state space analysis also explained in a simple manner. The effort has been taken to explain all the concepts in a simple language to make the students to understand the concepts very easily.

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- Basics of Control System
- Time Domain Analysis
- Concept of Stability
- Correlation
- Compensators Design

Author

A. Ambikapathy

A. Ambikapathy currently working as an assistant professor in " Galgotia College of Engineering and Technology " holds M. Tech degree. She has presented five papers in national level conferences. She worked under three different universities and having ten years of teaching experience.

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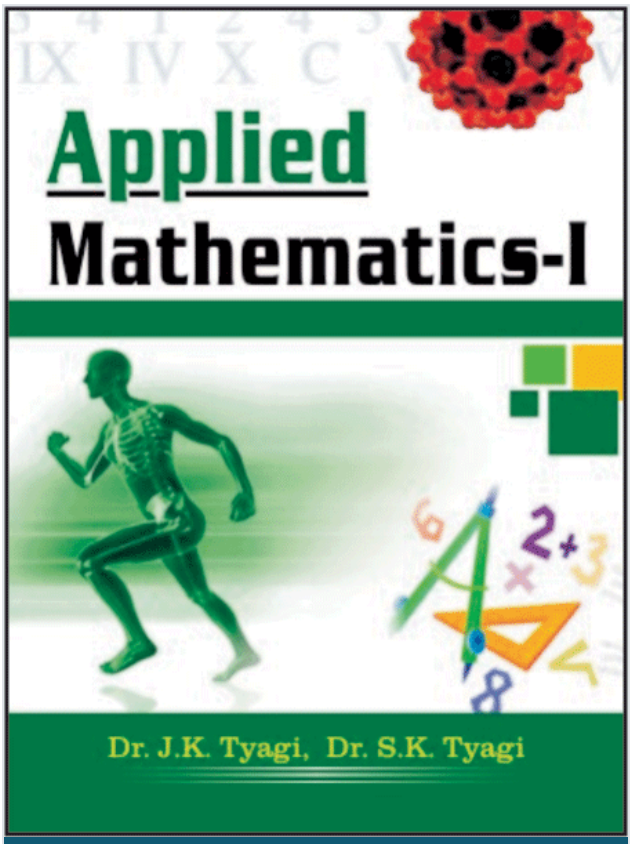

J.K. Tyagi, S.K. Tyagi

Applied Mathematics-I

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Product Description

The language is very simple and easily understandable. The approach is to communicate the practical aspects of mathematics in a way that drives out the common fear of learning any mathematical subject. A large number of solved and unsolved problems have been included. Topics are followed by figures and tables. The notations and terminology have been clearly explained wherever desirable. In each chapter, all concepts and definitions have been discussed in detail with suitable examples.

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Author

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S.K. Tyagi

Dr. S.K. Tyagi is Senior Lecturer, Amity School of Engineering and Technology , Amity University, Noida (U.P.)

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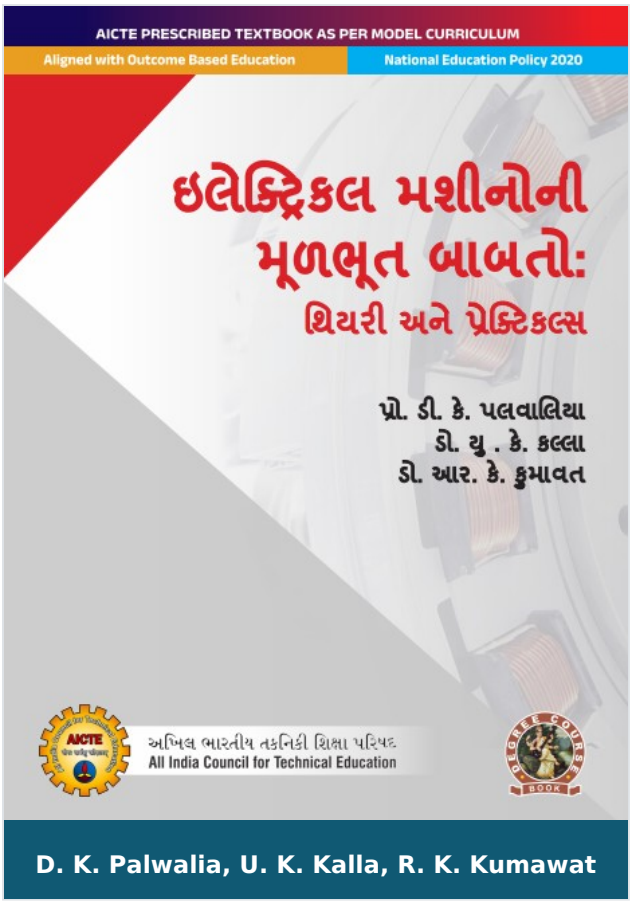

Basics of Electrical Machines: Theory and Practicals

Author :	D. K. Palwalia, U. K. Kalla, R. K. Kumawat
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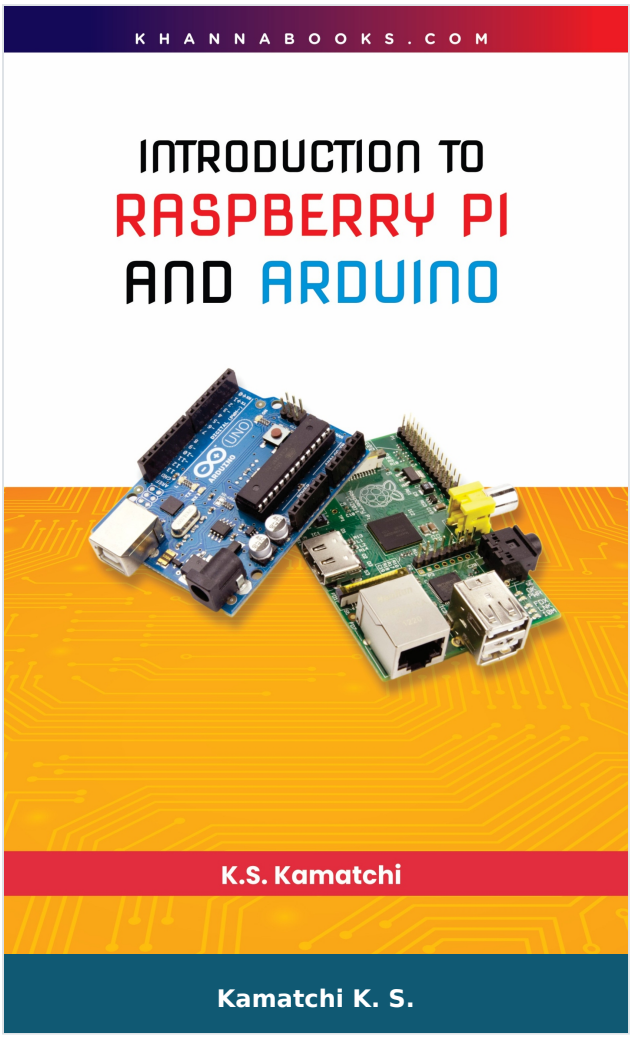

Introduction to Raspberry Pi and Arduino

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Country Origin :	India

Product Description

"Introduction to Raspberry Pi and Arduino" is a comprehensive, practical guide designed to launch aspiring engineers, students, and hobbyists into the dynamic world of the Internet of Things (IoT), embedded systems, and electronics. Recognizing that modern IoT innovation rests upon versatile prototyping tools, this book provides focused, hands-on instruction for the two most popular platforms: Arduino and Raspberry Pi.

The core purpose of this text is to bridge the gap between theoretical electronic concepts and the tangible creation of smart devices. The journey begins by laying the groundwork, introducing the essential components of any IoT ecosystem, such as sensors and actuators. The book then systematically separates the platforms: Arduino is utilized for building interactive and rapid-prototyping applications, while the more powerful Raspberry Pi is leveraged for creating complex, networked, and web-connected projects. Readers will learn to integrate Wi-Fi supported modules like the ESP 8266, manage cloud communication (e.g., Thing Speak, Blynk), and design full-scale home automation systems that combine both microcontrollers.

With its academic yet friendly tone and chapters structured around hands-on examples, this resource guarantees that by the end, you will be equipped with the necessary knowledge and practical skills to create your own innovative IoT solutions, moving from the simplest to the most sophisticated systems. This book is your essential gateway to becoming a builder in the digital age.

Salient Features:

• Dual Platform Focus: Dedicated, practical coverage of both Arduino (for interactive prototyping) and Raspberry Pi (for complex, networked systems), providing versatile skills for any DIY electronics project.

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• Core IoT Components: Detailed introduction to sensors and actuators and their roles in IoT systems, with practical guidance on interfacing various types of sensors (LDRs, DHT-22, etc.) for crucial data collection.

• Hands-on Projects: Every chapter provides hands-on examples and step-by-step guides, enabling readers to follow along, experiment, and immediately build their own IoT applications for real-world problem-solving.

• Cloud Communication: Comprehensive coverage of IoT integration and cloud connectivity, including using the ESP 8266 Wi-Fi module and platforms like ThingSpeak and Blynk for remote data monitoring.

• Web-Connected Control: Teaches how to leverage the Raspberry Pi's potential for web-connected projects, covering key concepts like setting up a LAMP Web-server and controlling GPIO pins over a web browser.

• Visual Programming: Includes exploration of the Node-RED Visual Editor, which simplifies home automation and IoT design using a flow-based programming model to connect hardware, APIs, and online services.

• Integrated Automation: Explains the design and implementation of home automation systems that leverage both platforms, covering communication protocols like MQTT and providing blueprints for smart devices and solutions.

• Code Practicality: Provides executable code and programming guidance in both C/C++ (for Arduino sketches) and Python (for Raspberry Pi GPIO and networking), preparing the reader for full-stack embedded development.

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