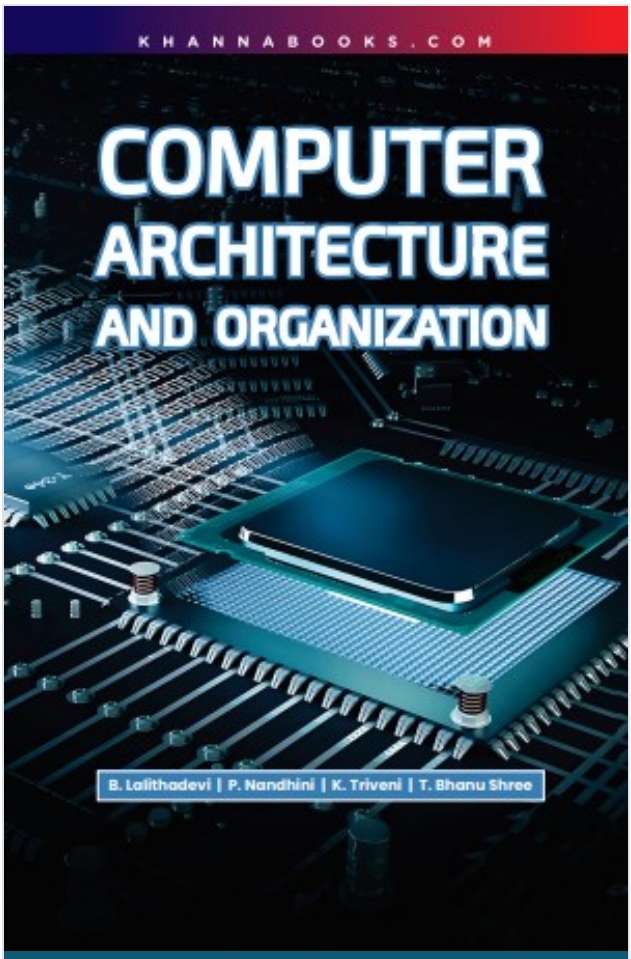


B. Lalithadevi, P. Nandhini, K. Triveni, T. Bhanu Shree

Computer Architecture and Organization

Author :	B. Lalithadevi, P. Nandhini, K. Triveni, T. Bhanu Shree
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Product Description

Computer Architecture and Organization

This book, "COMPUTER ARCHITECTURE AND ORGANIZATION," offers a comprehensive and structured exploration of the fundamental principles that govern the operation and design of modern computing systems. As technology continues its rapid advance across fields like artificial intelligence, healthcare, and communication, understanding the internal workings of a computer is crucial for creating high-performance and efficient architectures.

Designed specifically for students and professionals in computing technology, this text effectively balances theoretical concepts with practical applications to prepare readers for advanced studies and successful careers. The journey begins with the essential building blocks, detailing general register organization, instruction cycles, and the vital stack organization that facilitates efficient data manipulation and function calls.

The content systematically progresses through the core components, providing a clear explanation of the Arithmetic Logic Unit (ALU), including complex operations like Booth multiplication and floating-point arithmetic. Crucially, the book dedicates significant coverage to memory organization, exploring the essential memory hierarchy, cache memory (including mapping and replacement policies), and virtual memory implementation. Finally, it addresses contemporary system design challenges by covering Input-Output (I/O) mechanisms such as Direct Memory Access (DMA), and the complexities of modern multiprocessor systems, including interconnection structures and advanced cache coherence protocols. With its clear explanations and structured approach, this book serves as an indispensable resource for mastering the architecture and organization that powers the digital world.

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- **General Register Organization**: Deep dive into how CPU registers (PC, AC, DR, IR) and the Last-In, First-Out (LIFO) stack organization manage data and control flow for high-speed instruction execution.
- **Instruction Set Comparison**: Compares and contrasts different instruction set architectures like MIPS, RISC, and CISC, alongside an analysis of one-, two-, and three-address instruction formats.
- **Advanced Arithmetic Units**: Comprehensive coverage of ALU micro-operations and complex computational algorithms, including Booth's multiplication and detailed procedures for floating-point arithmetic operations.
- **Memory Hierarchy Mastery**: In-depth analysis of the memory hierarchy, including the structure and function of cache memory, virtual memory, and specialized Content-Addressable Memory (CAM).
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- Memory organization
- Input-Output Organization
- Characteristics of multiprocessors

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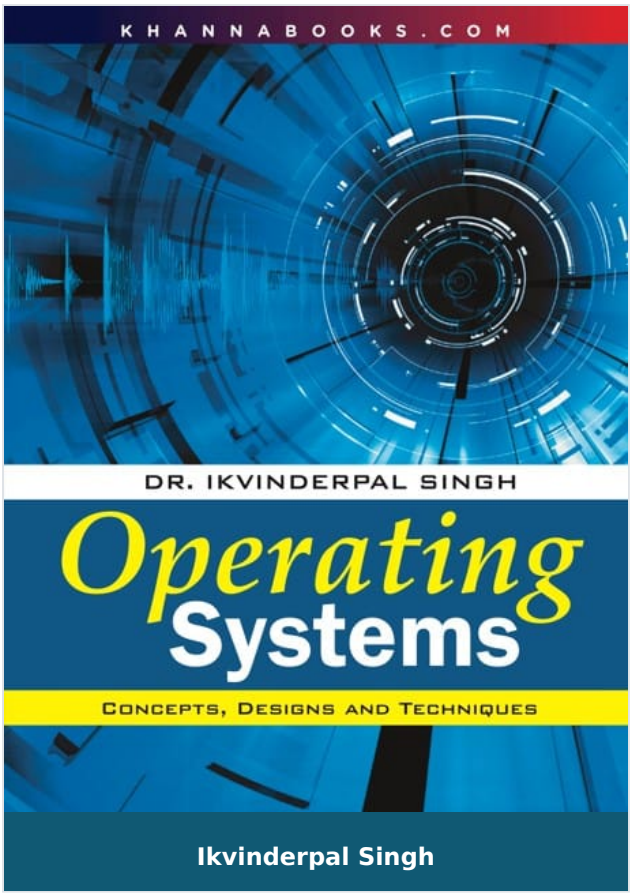
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Fundamental concepts are introduced in simple terms, Numerous examples are included to illustrate concepts and techniques. The sequence of topics is well planned to provide a seamless transition from design to implementation. With each chapter, the continuity of topics is excellent. The figures appropriately enhance and amplify the topics. Case studies are organized in a lucid manner. The exercises can be found at the end each chapter. Other sections are devoted to advanced topics, e.g. deadlock characterization, process synchronization and scheduling in multiprocessor systems, file sharing semantics, file system reliability and capabilities.

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- Process Synchronization
- Deadlocks
- Memory Management
- Virtual Memory
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- Disk Management
- File Management
- Protection And Security
- Distributed Systems
- Case Studies Of Unix And Windows NT

Author

Ikvinderpal Singh

Dr. Ikvinderpal Singh is an Assistant Professor at Trai Shatabdi Guru Gobind Singh Khalsa college Amritsar, bringing 17+ years of academic leadership and research experience to the field of computer science. A Gold Medalist in B.Sc. IT, with an MCA (Distinction) and a Ph.D. in Neural Networks and Image Processing, he is known for blending rigorous research with practical innovation. A prolific academic creator, he has authored 37 books, published 82+ research papers, and designed 100+ industry-aligned skill-development

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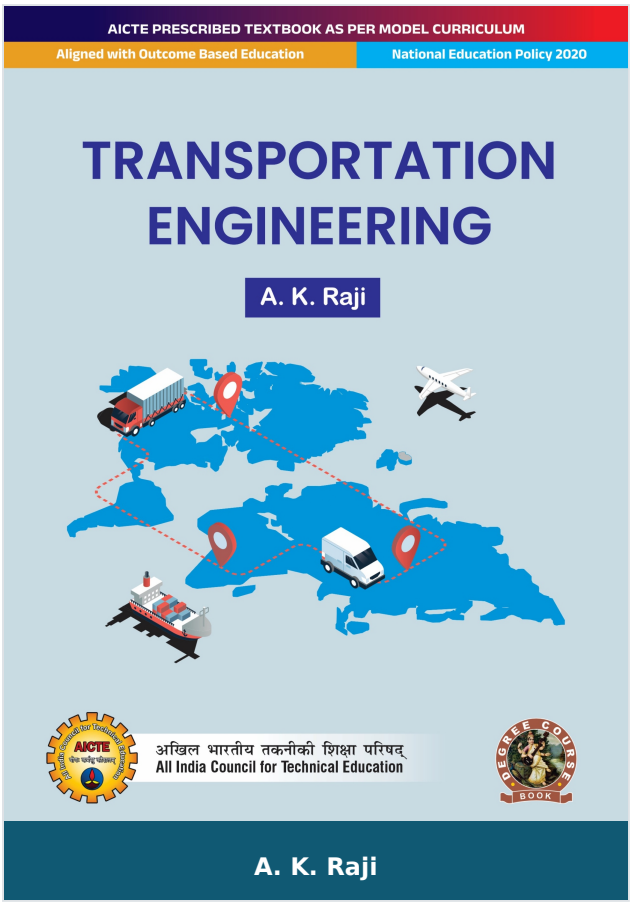
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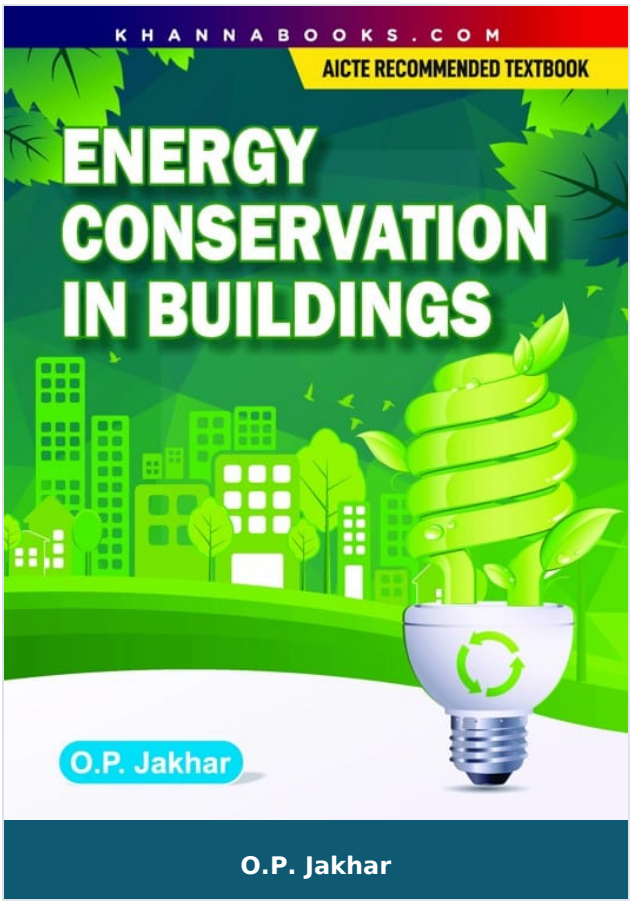
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O.P. Jakhar

Energy Conservation in Buildings

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Product Description

This book has the basic motive to guide the postgraduate and research students working in the field of energy conservation. This is to cater the strong need felt by the students pursuing the course on energy Conservation in Buildings during their M. Tech. and PhD studies. I have tried to compress the subject matter from the view point of research students. The different simulation techniques, such as Power DOC-2, BSIM 2000, e-Quest, which are extensively used in the energy conservation in buildings, have been added for quick references.

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- Chapter-3: Simulation Techniques of Energy Conservation in Building
- Chapter-4: Passive System of Energy Conservation in Buildings
- Chapter-5: Passive cooling Methods for Building in Hot and Dry Climate
- Chapter-6: Energy Auditing and Radiation Cooling of Building in hot and Dry Climate
- Reference

Author

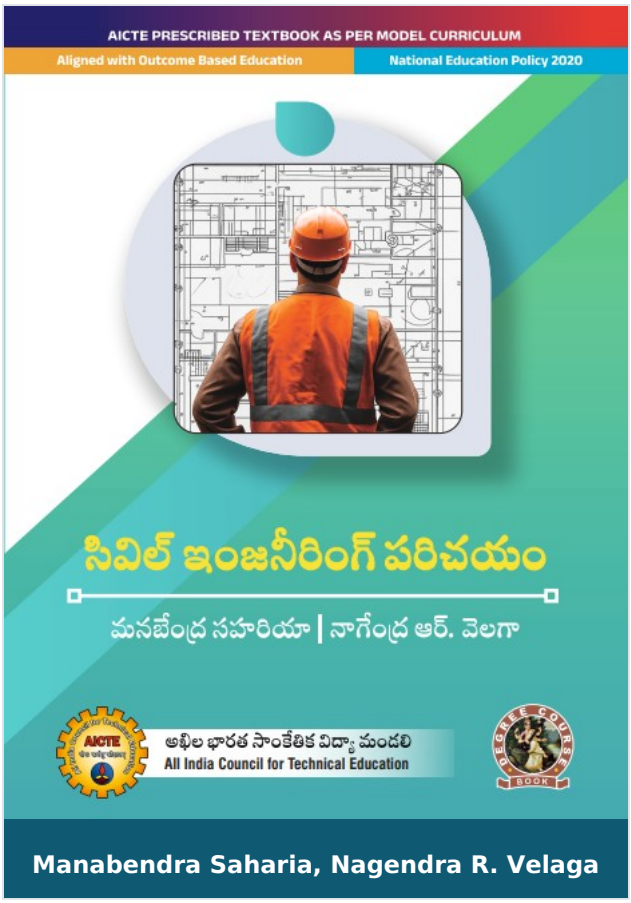
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Dr. O.P. Jakhar got commissioned as Lieutenant in NCC in 2005 and presently he is serving as Captain at 7 Raj. BN. NCC, Bikaner.

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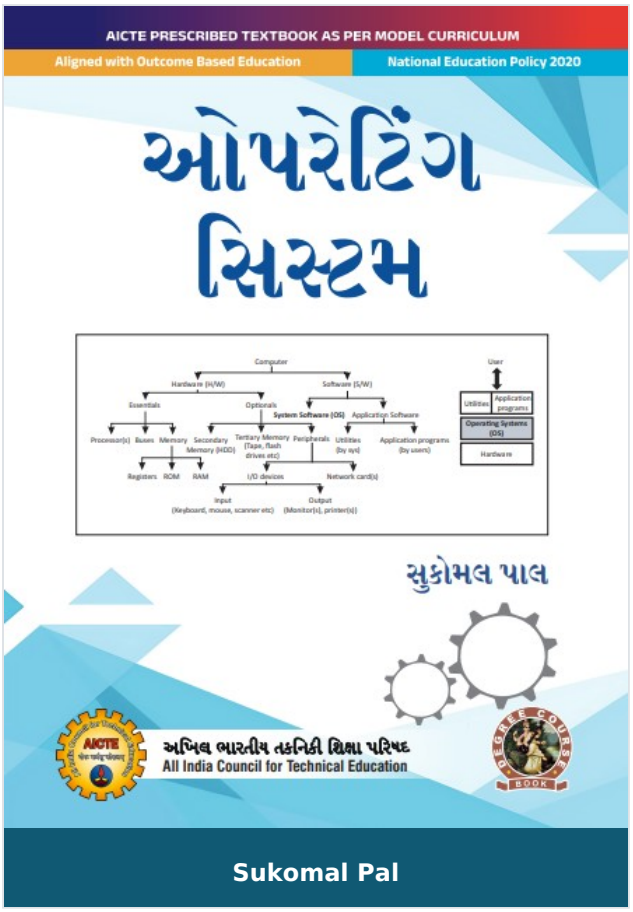
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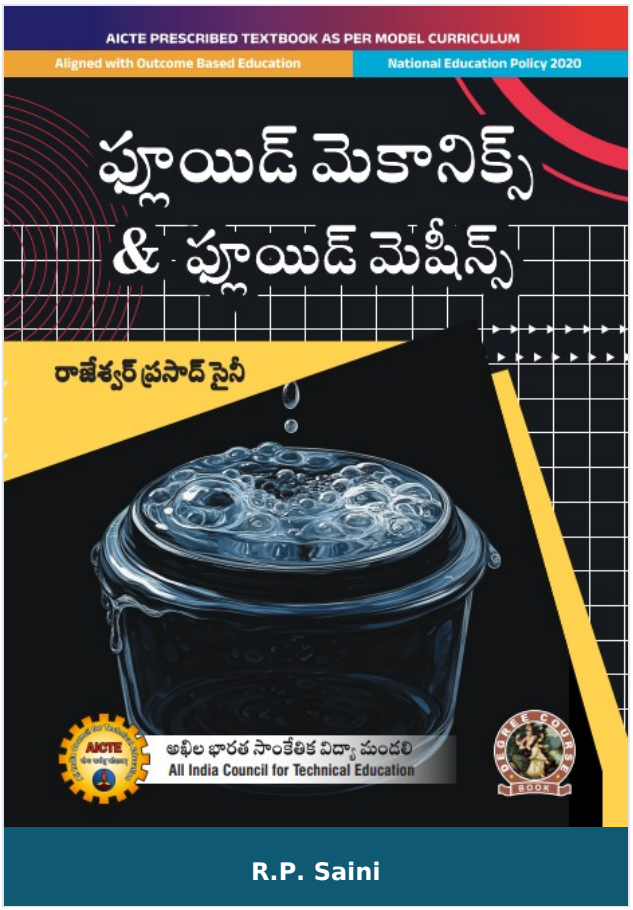
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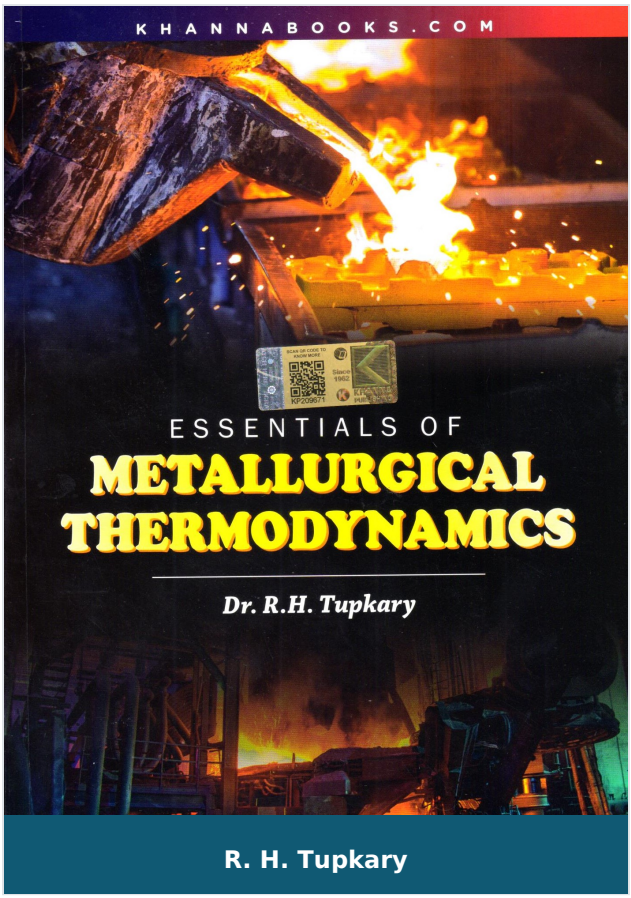
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R. H. Tupkary

Essentials of Metallurgical Thermodynamics

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Product Description

Thermodynamics is the very basic science to appreciate all engineering disciplines, more particularly the chemical, metallurgical and mechanical engineering in terms of the efficiencies in various related operations that is why metallurgical thermodynamics has been developed specifically to understand the metallurgical engineering processes and their energy efficiencies. Any change is driven by the potential driving it. Thermodynamics is the tool to appreciate that potential and to assess the related energy efficiency. Hence thermodynamics is the basic tool that helps to assess finally the economics of any metallurgical process. The more one understands it the better. The present book attempts to explain the very basic thermodynamic concepts underlying metallurgical engineering operations and therefore the related economics.

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- Solution I
- Solution II
- Solution III
- Equilibria in Phase Diagrams
- Electrochemical Processes
- Free Energy - Temperature Relationship
- Kinetics of Reactions

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R.H. Tupkary Dr. R. H. Tupkary graduated in Met. Engg. from Bananas Hindu University in 1959 in first class and was placed at third position in merit list. He completed M.Eng.Sci. and Ph.D. from University of Melbourne in 1963 and 1966 respectively. He worked as a lecturer in Met. Egg. during 1959-62 and Reader during 1966-1970 period in BHU and then joined Visvesvaraya Regional College Engineering, Nagpur as Professor and later became head and voluntarily retired in 1994. Dr. Tupkary is a recipient of Binani Gold

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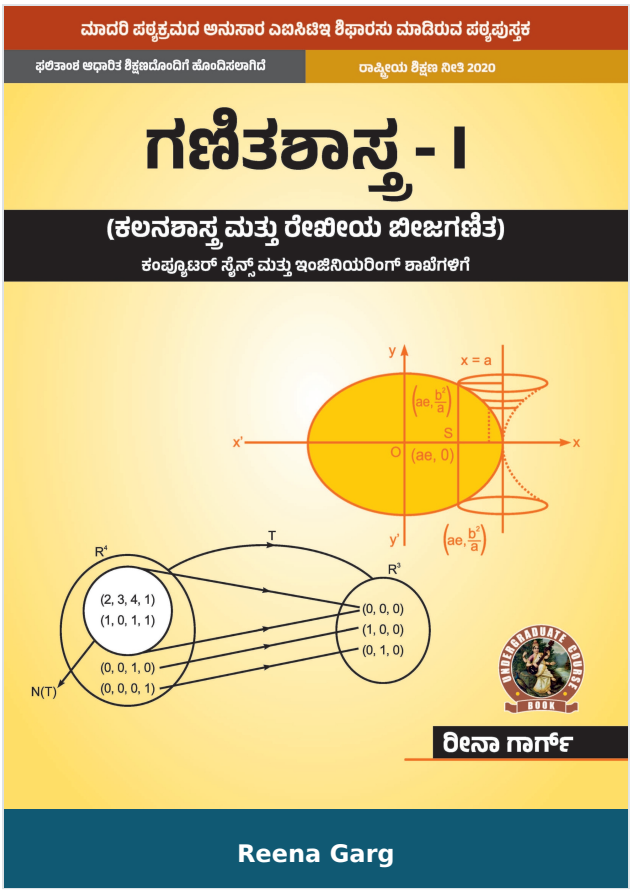
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Medal of Indian Institute of Metals in 1972 and Distinguished Alumnus Award of BHU in 1988. He has published several technical papers and is more known for his two books, one on Steel Making and the other on Iron Making which are very popular textbooks of the subjects since 1977. Out of these two books, "Steel Making" was written when he was confined in Nagpur Central Jail during the emergency period of 1975-77. During his tenure as professor in VRCE, he was actively associated with Nagpur University, through its various academic and administrative bodies as their elected member. He has also worked as Managing Director of one Marathi daily published from Nagpur during the period 1994-97. He is committed social worker and is associated with varieties of such activities at and around Nagpur.

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Mathematics-I (Calculus and Linear Algebra) For Computer Science Engineering Branches

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Product Description

Calculus and Linear Algebra cover all the modules prescribed by AICTE model curriculum to all the 1st year CSE students studying in engineering institutions and universities of the country. It serves as both text book /or useful reference work. It contains 5 units which included calculus, Algebra and vector spaces along with their applications. This renowned and well respected title provides in one handy volume with the essential mathematical tools that help in understanding the subject and problem solving techniques with many real life engineering applications. As per trademark of AICTE. This book is in student's friendly style, author has endeavored enormous efforts in providing numerous solved examples and exercise under each topic to facilitate better understanding of the concepts to the students. Majority of questions in this book have been designed to access the reader's understanding of the subject professionals or those who are preparing for competitive examinations will also find this book very useful. This book will give the students a complete grasp of the mathematical skills that are needed by engineers all over the country.

Some Salient Features of the Book:

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2. Emphasis on the applications of concepts and theorems.

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5. To clarify the subject, the text has been supplemented through Notes, Observations and Remarks; an attempt has been made to explain the topic through maximum use of geometries wherever possible.

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- Guidelines for Students
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- Calculus-II
- Matrices
- Vector Spaces –I
- Vector Spaces – II
- Index
- CO and Po Attainment Table.

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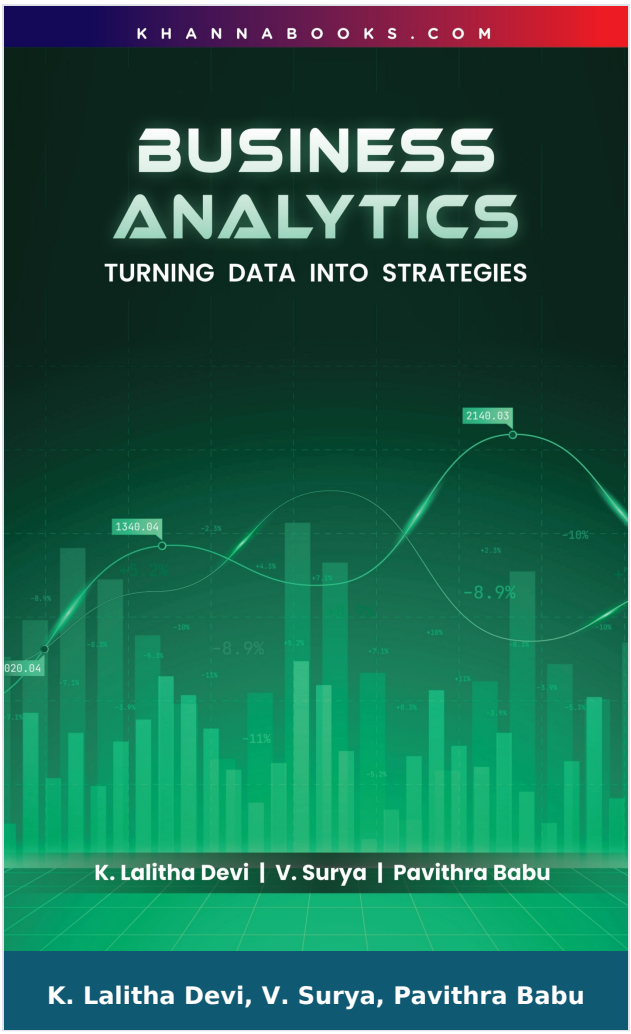
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papers in various InternationalJournals. She is a life-time member of Forum of Inter-disciplinary mathematics in India. She is a member of reviewer Board in IJRET, Bangalore.

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Business Analytics (Turning Data into Strategies)

Author :	K. Lalitha Devi, V. Surya, Pavithra Babu
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Product Description

This book serves as an essential guide for navigating the complex, data-driven world, focusing on the discipline of Business Analytics (BA). Titled "Business Analytics Turning Data into Strategies," it is specifically designed to equip professionals, analysts, and decision-makers with the knowledge to harness the immense power of data for informed and effective business strategies.

The core purpose is to provide a comprehensive understanding of BA concepts, methodologies, and applications, going beyond traditional reporting to leverage statistical models and predictive algorithms to uncover hidden patterns and optimize strategies. It explores the full spectrum of analytics, from Descriptive Analytics—understanding past trends—to Predictive Analytics—forecasting future outcomes, and the advanced practice of Prescriptive Analytics—optimizing decisions and recommending the best course of action.

Structured to balance theoretical concepts with practical insights and real-world applications, the book provides a clear roadmap for driving growth, efficiency, and innovation. It delves into modern topics crucial for competitive advantage, including Big Data Analytics, Machine Learning, and Artificial Intelligence. Whether you are a beginner seeking foundational knowledge or an experienced professional looking to refine skills, this resource will equip you with the tools and mindset to transform raw data into a strategic asset for sustainable success.

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- Business Performance Management

Author

K. Lalitha Devi

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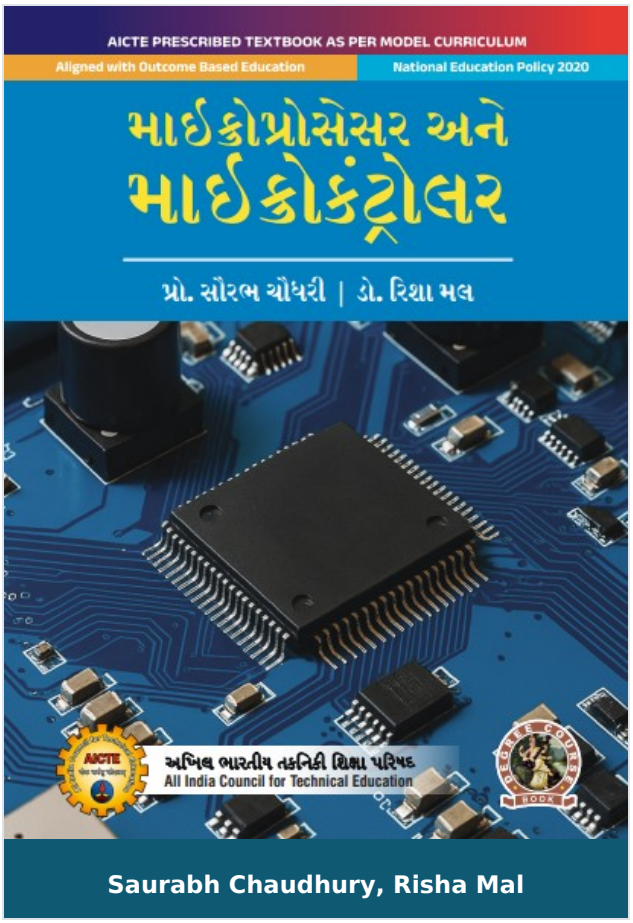
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Microprocessor and Microcontroller

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Product Description

Microprocessor and Microcontroller

This book aims at providing the readers specially, the second-year undergraduate students a thorough knowledge of microprocessors and microcontrollers in a best possible way. Syllabus of this book is as per the AICTE model of curriculum, following National Education Policy, 2020. Each chapter of the book is written in a very lucid manner so as to understand the underlying concepts easily with explanatory examples followed by review questions, exercises and QR codes of online links and other learning resources. The book begins with a brief history on the evolution of computers and processors for making the subject interesting. Further, starting from the very basic microprocessor 8085 and the basic microcontroller 8051, the book gradually progresses towards advanced microprocessors and microcontrollers in the most appropriate manner.

Salient Features:

- Content of the book aligned with the mapping of Course Outcomes, Programs Outcomes and Unit Outcomes.
- In the beginning of each unit learning outcomes are listed to make the student understand what is expected out of him/her after completing that unit.
- Book provides lots of recent information, interesting facts, QR Code for E-resources, QR Code for use of ICT, projects, group discussion etc.
- Student and teacher centric subject materials included in book with balanced and chronological manner.
- Figures, tables, and software screen shots are inserted to improve clarity of the topics.
- Apart from essential information a ‘Know More’ section is also provided in each unit to extend the learning beyond syllabus.

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- Short questions, objective questions and long answer exercises are given for practice of students after every chapter.
- Solved and unsolved problems including numerical examples are solved with systematic steps

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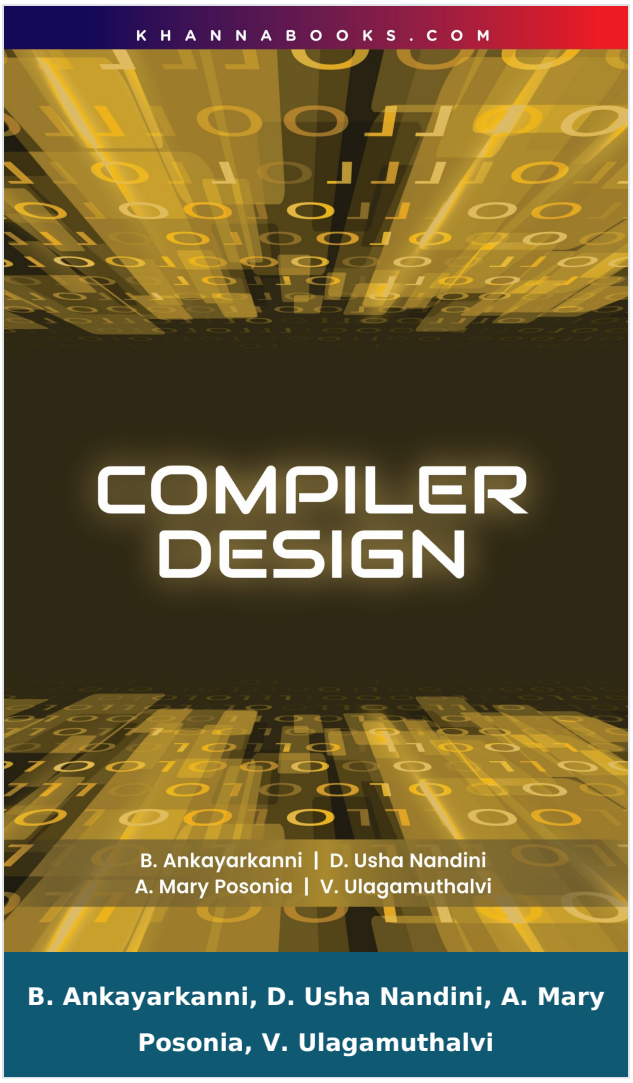
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Compiler Design

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Product Description

Compiler Design offers a comprehensive and organized introduction to the foundational principles, techniques, and practical tools necessary for constructing a compiler. Serving as an essential bridge between human-readable high-level programming languages and machine instructions, this book aims to unravel the complexity of the translation process and demystify compiler construction for both students and academics.

The book systematically guides readers through the entire compiler lifecycle, detailing each major phase: Lexical Analysis, Syntax Parsing, Semantic Analysis, Intermediate Code Generation, Code Optimization, and Final Code Generation. It adopts an approachable, academic tone, striving to simplify both fundamental ideas and advanced concepts by integrating theoretical foundations with practical implementations. For enhanced comprehension, the material is reinforced with a combination of theoretical discussions and numerous solved numerical problems. Furthermore, a strong emphasis is placed on practical skill development, featuring dedicated coverage of industry-standard tools like LEX and YACC, ensuring the target audience—computer science students and professors—gains hands-on experience in building real-world compilers. This indispensable resource provides a clear pathway to mastering the art and science of transforming source code into efficient, executable programs.

Salient Features:

• Systematic Phase Coverage: Presents the compiler's structure through distinct, organized units, detailing the functionality of the analysis-synthesis model from scanning to code generation.

• Practical Tool Integration: Provides detailed sections on using LEX and YACC (Yet Another Compiler Compiler), giving students hands-on experience in generating practical Lexical Analyzers and Parsers.

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• Comprehensive Parsing Methods: Explores a full range of parsing techniques, including Top-Down (LL(1)) and sophisticated Bottom-Up (LR, SLR) parsing, complete with error handling and recovery strategies.

• Intermediate Code Representation: Dedicated unit focusing on Syntax-Directed Translation (SDT), implementing three-address code, and handling complex programming constructs like procedure calls and switch-case statements.

• Advanced Optimization Techniques: Covers crucial optimization strategies like Data Flow Analysis, Loop Optimization, and the use of Directed Acyclic Graphs (DAGs) for efficient, high-speed target code generation.

• Efficient Code Generation: Discusses critical implementation issues such as managing Run-Time Storage, optimal Register Allocation and Assignment, and the final conversion of assembly code to machine code.

• Formal Language Foundation: Clearly explains the role of Formal Languages, covering Regular Expressions and both Deterministic and Non-Deterministic Finite Automata (DFA/NFA) conversions in lexical design.

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- Syntax Analysis
- Syntax Directed translation and Intermediate Code Generation
- Code Optimization
- Code Generation

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