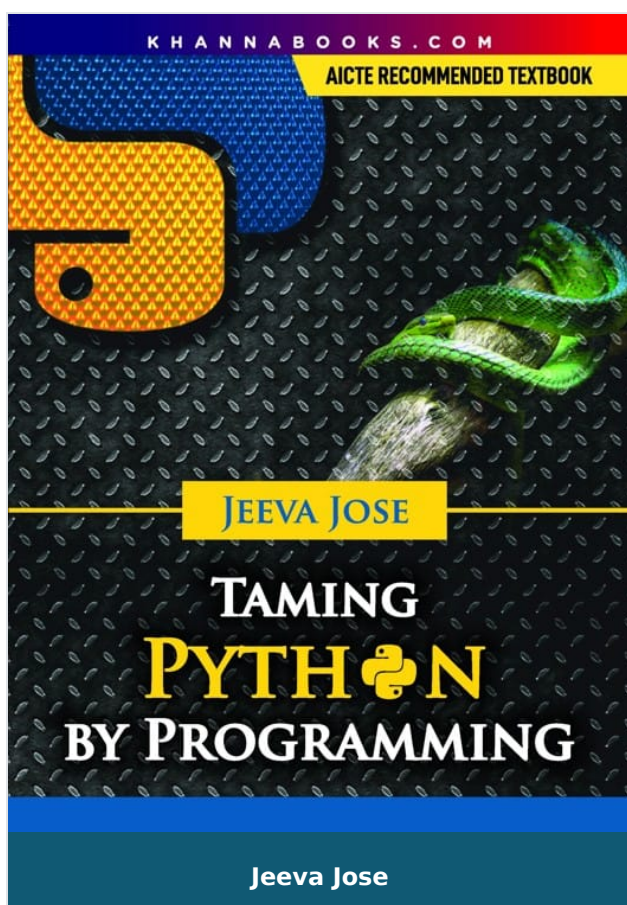




Taming PYTHON By Programming

Author :	Jeeva Jose
ISBN 13 :	978-93-86173-34-8
ISBN 10 :	9386173344
E-ISBN 13 :	978-93-86173-34-8
Edition :	First
Pages :	348
Type of book :	Physical
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Language :	English
Publisher :	Khanna Publishing House
M.R.P :	Rs 425.00
Categories :	UNIVERSITY RECOMMENDED, Emerging Technologies, Book Store, Best Sellers
Condition Type :	New
Country Origin :	India

Product Description

This is a great book for Python Beginner and Advanced Learner which covers Basics to Advanced Python Programming where each topic is explained with the help of Illustrations and Examples. More than 450 solved programs of this book are tested in Python 3.4.3 for windows. The range of Python Topics covered makes this book unique which can be used as a self study material or for instructor assisted teaching. This books covers Python Syllabus of all major national and international universities. Also it includes frequently asked questions for interviews and examination which are provided at the end of each chapter.

Table Of Contents

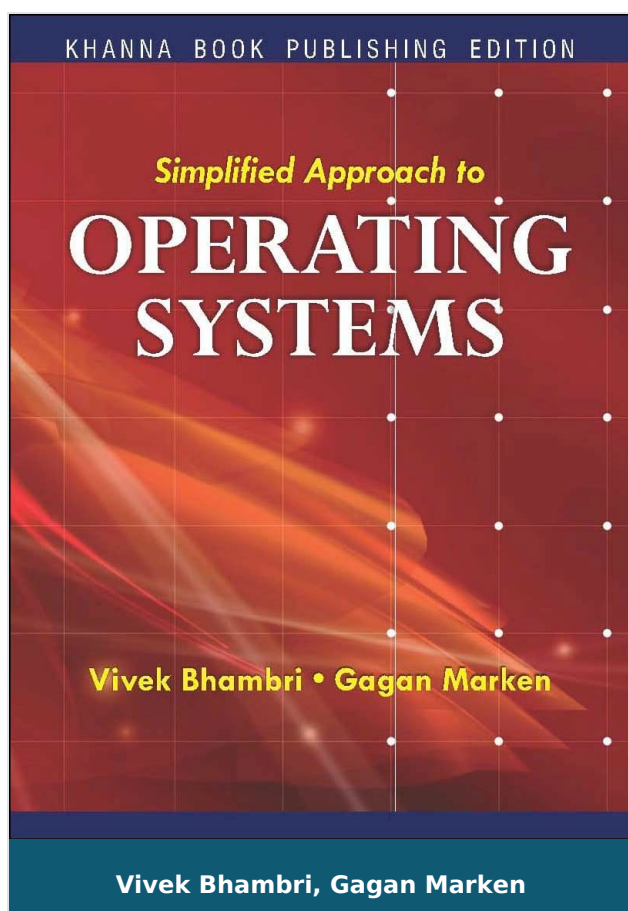
- Introduction to Python
- Data Types and Operations
- Flow Control
- Functions
- Modules and Packages
- File Handling
- Object Oriented Programming
- Exception Handling
- Regular Expressions
- Database programming
- Iterators,Generators and Decorators
- GUI Programming
- Multithreading
- CGI Programming
- Socket Programming
- Index

Author

Jeeva Jose

Dr. Jeeva Jose completed Ph. D. in Computer Science from Mahatma Gandhi University, Kerala, India and is a faculty member at BPC College, Kerala. Her passion is teaching and areas of interests include world wide web, Data Mining and Cyber laws. She has been in higher education for the last 15 years and has completed three research projects funded by UGC and KSCSTE. She has published more than twenty research papers in various

refereed journals and conference proceedings. She has edited three books and has given many invited talks in various conferences. She is a recipient of ACM-W Scholarship provided by Association for Computing Machinery, New York.



Simplified Approach to Operating Systems

Author : Vivek Bhambri, Gagan Marken

ISBN 13 : 978-93-82609-15-5

ISBN 10 : 9382609156

E-ISBN 13 : 978-93-82609-15-5

Edition : 1

Pages : 352

Type of book : Physical

Year : 2013

Language : English

Publisher : Khanna Publishing House

M.R.P : Rs 350.00

Categories : [Computer Science Engineering,](#)
[Book Store](#)

Condition Type : New

Country Origin : India

Product Description

The book 'Simplified Approach to Operating Systems' is designed as a basic text book for computer science students at Post Graduation and under Graduation levels. It explains the technical concepts of operating systems in simple and easily understandable language. It does not bind the reader to one particular operating system, rather explains the concepts in general. It covers the complete syllabus of MCA,BCA, B. Tech and M.Sc. (IT) courses of all Indian Universities.

Table Of Contents

- Introduction To Operating System
- Type Of Operating System
- Process Management
- CPU Scheduling
- Deadlocks
- Process Synchronization
- Memory Management
- Virtual Memory
- File Management
- Device Management
- Protection & Security
- Distributed File System
- Case Study On disk Operating System (DOS)
- Case Study On Windows Operating System
- Case Study On Unix
- Case Study On Linux Operating System
- Multiple Choice Questions
- Model Question Papers

Author

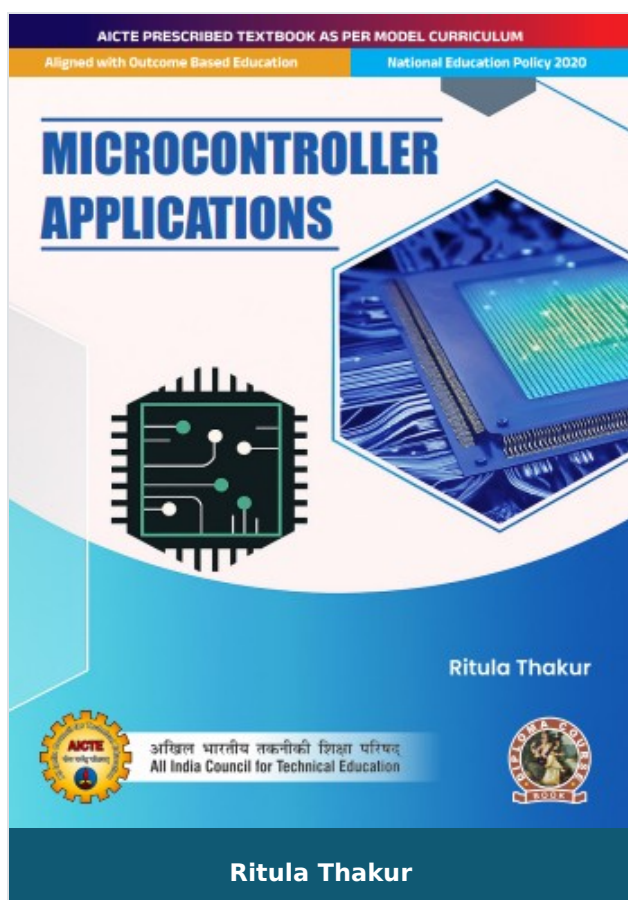
Vivek Bhambri

Vivek Bhambri is working as Head, Department of Computer Sciences at Desh Bhagat Institute of Management and Computer Sciences, Mandi Gobindgarh (Punjab). He has a

total teaching experience of 10 years. He is pursuing his research in the field of data mining. His areas of interest include Data Mining and Computer Architecture. He has published more than 20 research papers in International and National Journals.

Gagan Marken

Gagan Marken is working as Assistant Professor, in Computer Sciences Department at Desh Bhagat Institute of Management and Computer Sciences, Mandi Gobindgarh, (Punjab). He has a total experience of 12 years in the Industry and Teaching. He has published more than 20 papers in International and National Journals.



Microcontroller Applications

Author :	Ritula Thakur
ISBN 13 :	978-93-55385-04-8
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E-ISBN 13 :	978-93-55385-04-8
Edition :	First
Pages :	152
Type of book :	Physical
Year :	2026
Language :	English
Publisher :	Khanna Publishing House
M.R.P :	Rs 280.00
Categories :	AICTE Prescribed Textbooks, English Books, Book Store
Condition Type :	New
Country Origin :	India

Product Description

Microcontroller Applications

The Microcontroller Applications has been designed to serve as a textbook for diploma students enrolled in Electrical, Electronics, and Instrumentation & Control branches. It will also serve well as reference to engineers and hobbyists working with the 8051. The detailed coverage of this book includes an introduction microcontroller, history of development of microcontrollers. It mainly covers 8051, along with its architecture and pin diagram. Assembly language programming of 8051 has been covered in detail gaining insight into how instructions are classified. A special chapter has been dedicated to Embedded C programming for the 8051 microcontroller, delving into essential aspects crucial for programming for embedded system. The book also explores various software development tools required for developing projects based on Assembly language and Embedded C programming of 8051.

Salient Features

- Introduction to 8051 microcontroller, its architecture, pin Diagram and SFRs.
- Classification of instructions for 8051 and detailed programs with explanation.
- Advanced concepts such as Timer/Counters, Serial Communication, Interrupts.
- Step-by-step guide to create Hex file using Keil Compiler.
- Detailed steps guidance for burning Hex file into microcontroller using Flashmagic.
- Unit-wise summary to revise important points highlighting key points of each unit.
- QR codes in each chapter to give student more insight into the subject.

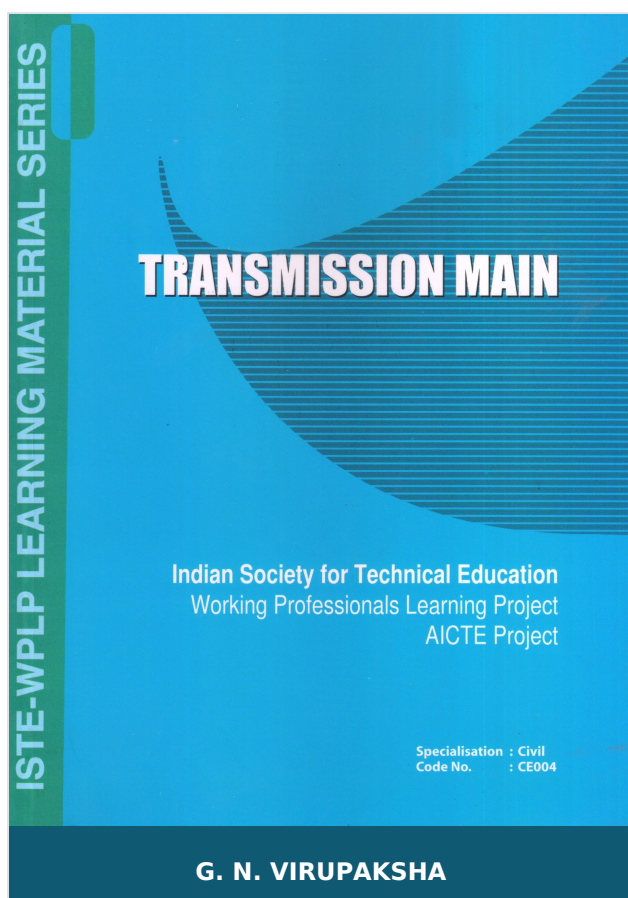
Table Of Contents

- Foreword
- Dedication
- Acknowledgement
- Preface
- Outcome Based Education
- Course Outcomes
- Guidelines for Teachers
- Guidelines for Students
- Abbreviations and Symbols
- List of Figures
- List of Figures
- Introduction to microcontrollers
- Architecture of 8051 Microcontroller
- Instruction set and Programs
- Embedded C Programming for 8051
- Internal peripherals and Related programs
- References
- CO and PO Attainment Table
- Index

Author

Ritula Thakur

Dr. Ritula Thakur Associate Professor, National Institute of Technical Teachers Training & Research



Transmission Main

Author :	G. N. VIRUPAKSHA
ISBN 13 :	978-93-55389-75-6
ISBN 10 :	9355389752
E-ISBN 13 :	978-93-55389-75-6
Edition :	1
Pages :	156
Type of book :	Physical
Year :	2006
Language :	English
Publisher :	Khanna Publishing House
M.R.P :	Rs 218.00
Categories :	Civil Engineering, Book Store, ISTE Series
Condition Type :	New
Country Origin :	India

Product Description

Water is essential commodity for the survival of life. Providing safe drinking water of adequate quantity for this purpose. Water supply system involves transmission of water from source to area of consumption safely. Transmission Main account for the appreciable part of capital outlay of water system and hence careful consideration of techno-economics is called for while designing the transmission main.

This learning material "Transmission Main" clearly mentions selections of pipe material, advantages and disadvantages, optimization of size of main, design criteria and need for protection of pipeline against transient pressure and also procedure for laying and maintenance of pipeline,.

This learning material is useful for practicing engineers, administrators and any other authority that are responsible for water supply and irrigation activities.

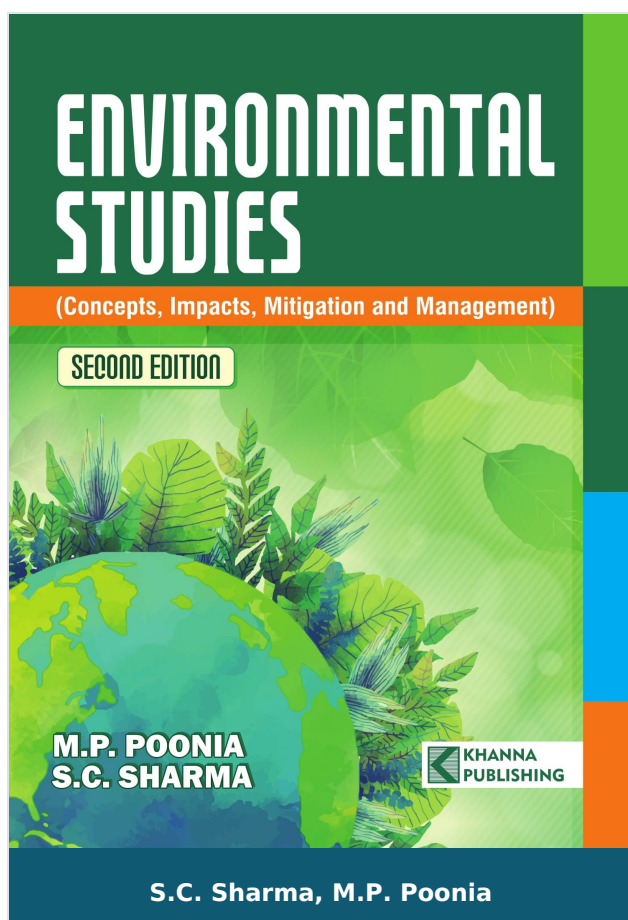
Table Of Contents

- PREFACE
- Introduction To Transmission Main.
- Pipe Material Selection.
- Optimization of Transmission Main.
- Transmission Main Design.
- Criteria of Selection of Pumps.
- Surge Protection System.
- Flow Measurement System.
- Laying of Pipes.
- maintenance
- of Transmission system.

Author

G. N. VIRUPAKSHA

G. N. VIRUPAKSHA



Environmental Studies

Author : S.C. Sharma, M.P. Poonia

ISBN 13 : 978-93-86173-09-6

ISBN 10 : 9386173093

E-ISBN 13 : 978-93-86173-09-6

Edition : Second

Pages : 460

Type of book : Physical

Year : 2021

Language : English

Publisher : Khanna Publishing House

M.R.P : Rs 399.00

Categories : [Civil Engineering, UNIVERSITY RECOMMENDED, Environmental Engineering, Environmental Engineering, Book Store](#)

Condition Type : New

Country Origin : India

Product Description

Environmental degradation has been a major concern since past few decades, because of economic growth and development across the world has caused major impacts on the Earth's ecosystems and natural resources to an extent that can limit the well-being of future generations.

India has recently started realizing the importance of environment and the environmental education. Following the 2001 Supreme Court directive, the environmental education has been or is being included in the curriculum right from the school stage to the College/ University level.

This book covers the syllabi of all Indian Technical Universities and other Universities for different disciplines, may it be in the name of environmental studies, environmental science, ecology or natural resource management. This book is written to bring about an awareness of a variety of environmental concerns and deals from concepts through impacts, mitigation and management.

Table Of Contents

- An Introduction (Multidisciplinary Nature of Environmental Studies)
- The Earth and The Biosphere (Earth Sciences)
- Ecology
- Ecosystems
- Biodiversity and Conservation
- Natural Resources
- Forest Resources
- Water Resources
- Mineral Resources
- Land (Soil) Resources
- Energy Resources
- Food Resources
- Environmental Pollution (Hazards) and Control
- Waste Management
- Disaster Management
- Social Issues
- Environmental Challenges
- Human Pollution and The Environment
- Resettlement and Rehabilitation (R & R)
- Environmental Protection
- Environmental Legislation
- Environmental Impact Assessment (EIA)
- Environmental Management and Environmental Management Plan (EMP)

- Objective Type Question

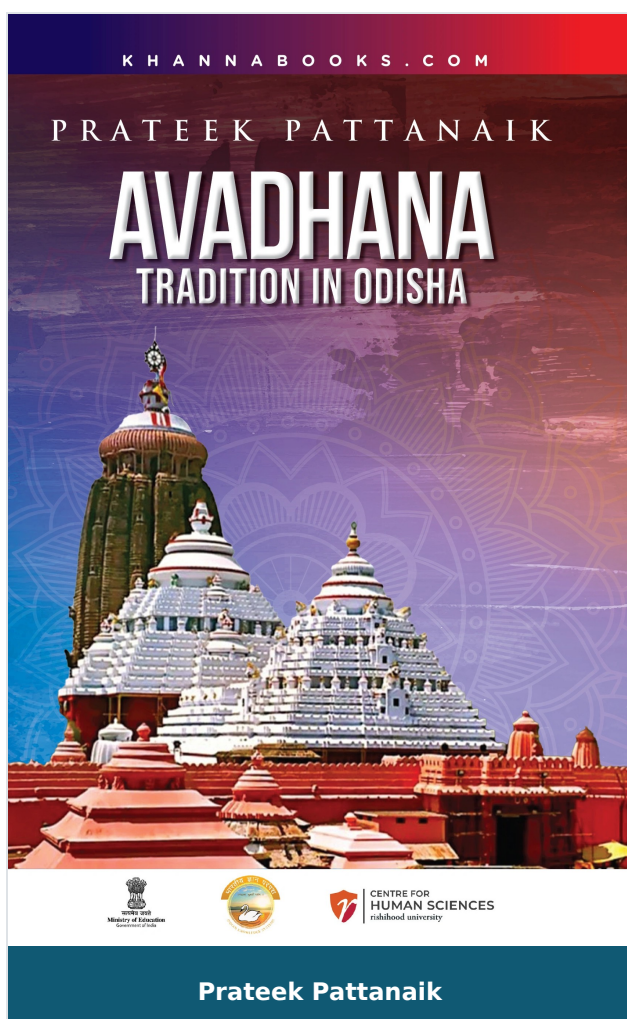
Author

S.C. Sharma

S.C. Sharma after graduation in 1966 joined as lecturer in Mechanical Engineering. He had been associated for more than 4 decades in various fields including learning and management of projects in India and abroad in different capacities. While working Hydro power projects for more than 15 years he has actively associated with various environmental and rehabilitation & resettlement issues and successfully resolved various complicated issues. He has also worked as consultant for matters related to safety, environment and R & R. He has written about a dozen books on subjects related to engineering and management including management of projects.

M.P. Poonia

Dr. M.P. Poonia is presently serving as Vice Chairman, All India Council for Technical Education (AICTE). Prior to this, he remained as Director, National Institute of Technical Teachers' Training and Research (NITTTR), Chandigarh. Dr. Poonia is the recipient of Bharat Mata Award conferred by Indian Institute of Oriental Heritage (an International Institute of Oriental Studies and Research, Kolkata. Dr. M.P.Poonia is specialized in the field of Mechanical Engineering. He possesses a vast experience of 30 years. He has published 80 research papers in National and International Journals and published 8 books with M/s. Khanna Book Publishing Company.



Avadhana (Tradition in Odisha)

Author :	Prateek Pattanaik
ISBN 13 :	978-93-55384-41-6
ISBN 10 :	9355384416
E-ISBN 13 :	978-93-55384-41-6
Edition :	1
Pages :	36
Type of book :	Physical
Year :	2025
Language :	English
Publisher :	Khanna Publishing House
M.R.P :	Rs 99.00
Categories :	New Arrivals, Book Store, Education & Knowledge Systems
Condition Type :	New
Country Origin :	India

Product Description

In the vibrant history of India's cultural and intellectual heritage, the tradition of Avadhana in Odisha stands as a lesser-explored yet profoundly rich chapter. Rooted in simultaneous handling across subjects and an intensive depth of knowledge, Odisha's Avadhana tradition is a unique amalgamation of intellectual prowess and cultural nuances. This book, titled "Avadhana Tradition in Odisha" endeavors to unravel the historical, cultural, and individual dimensions of this exceptional practice. While Avadhana is celebrated across the Indian subcontinent, the Odisha tradition distinguishes itself through its distinct categories of Avadhana, each demanding a unique level of expertise. The rare 100 Abadhana, alongside the more common 8, 10, 12, and 18 Abadhanas, forms a compelling aspect of Odisha's Avadhana landscape. Furthermore, the book seeks to shed light on extraordinary memorizers called Srutidhara-s who epitomize the intellectual acumen embedded in this tradition. Eminent Avadhanis of Odisha, such as Upendra Bhanja and Kabibhusana Gopinatha Patra, have played pivotal roles in preserving and advancing this cultural gem. Through meticulous examination, the book will showcase the finer classifications within Sangitavadhana, revealing how poetry, mathematics, games, and concentration converge in a harmonious symphony. The book's rationale extends beyond mere documentation. It aims to explore the meticulous examination process, the rigorous tests in each subject, and the unique role of Mukti Mandapa pandits as high supervisors, offering readers a comprehensive understanding of the intricate Avadhana tradition of Odisha. Moreover, the flexibility in language choice—Sanskrit, Odia, or both—further distinguishes Odisha's Avadhana practices. As the reader delves into the pages of this book, they are taken through the multilingual, multilayered world of Odisha's Avadhana. The meticulous examination of subject-wise tests, the integration of theory and application, and the extraordinary Avadhana experiences will collectively weave a narrative that not only preserves the tradition's legacy but also invites a renewed appreciation for the intellectual and cultural finesse intrinsic to Odisha's Avadhana.

tradition.

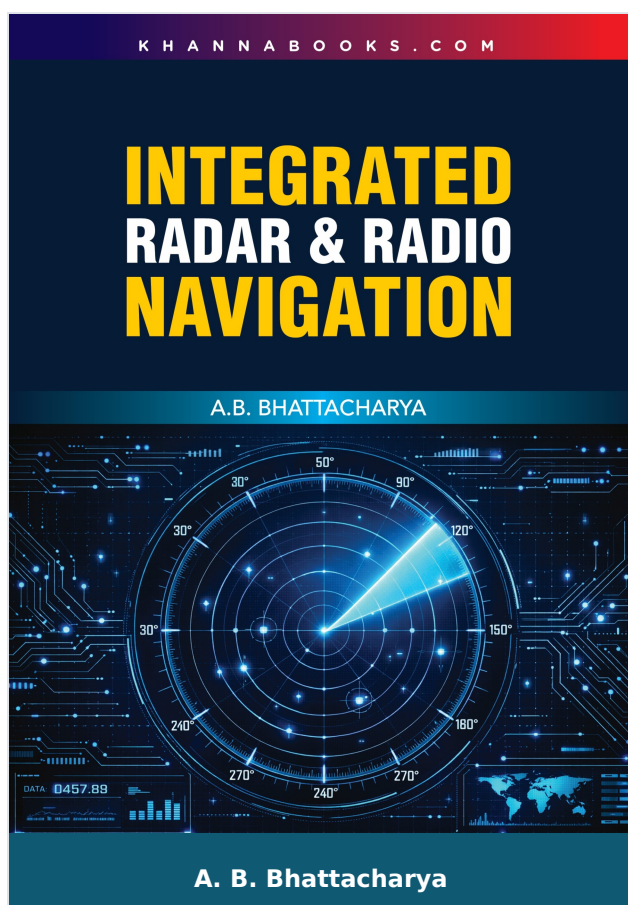
Table Of Contents

- Introduction
- Historical Context of Avadhana in odisha
- Varied Avadhana Categories in Odisha
- Notable Avadhanis of Odisha
- Fine Classification in Sangitavadhana
- Tests and practices in avadhana Subjects
- Shastra and Prayoga in Odisha's Avadhana Tradition
- Multilingual Avadhana and Liberty of Subject Choice
- The Rigorous Examination Process
- The Role of Mukti Mandapa Pandits
- Acharya Tarini Patra's Extraordinary Avadhana
- Conclusion

Author

Prateek Pattanaik

Prateek Pattanaik is a researcher and a Musician. an Odissi vocalist and Binakara, he was initiated into music by his grandmother, then continued training under Guru Brundabana Khandual and finally Pt Ramarao Patro, in the lineage of early 20th-century maestro 'Astabadhani Acharjya' Tarini Charan Patra. He is currently engaged as a research scholar on the 17th-century treatise 'Sangitanarayana' in the Department of Odia, Berhampur University. His work primarily delas with palm leaf manuscripts, early gramophone records and neglected musical forms across the state. He is the author of two books on Odissi music and the Odia Language.



Integrated Radar & Radio Navigation

Author :	A. B. Bhattacharya
ISBN 13 :	978-93-77083-87-8
ISBN 10 :	9377083877
E-ISBN 13 :	978-93-77083-87-8
Edition :	First
Pages :	408
Type of book :	Physical
Year :	2026
Language :	English
Publisher :	Khanna Publishing House
M.R.P :	Rs 695.00
Categories :	Electrical, Electronics & Communication Engineering, New Arrivals, Book Store
Condition Type :	New
Country Origin :	India

Product Description

Integrated Radar and Radio Navigation: From Classroom Fundamentals to Industry Frontiers by Prof. A.B. Bhattacharya is a comprehensive guide designed to bridge the gap between academic theory and modern industrial application. The text provides a unified exploration of radar systems, satellite-based GNSS, and ground-based radio aids, offering a holistic view of modern navigation architecture. It is specifically tailored for students in electronics, communication, and aviation engineering, as well as professionals seeking to align with global standards like ICAO and IMO.

The book moves beyond traditional pedagogy by integrating AI-enabled autonomous platforms and quantum navigation concepts. With a focus on practical mastery, it features numerous numerical problems, MCQs, and real-world project ideas. This blend of foundational electromagnetic principles and cutting-edge technological trends ensures readers are well-equipped for the evolving demands of the aerospace and maritime sectors.

Salient Features

- **Unified Navigation Architecture:** Explores the integration of radar, radio aids, and GNSS to ensure high-integrity positioning for modern maritime and aviation operations.
- **Global Standard Alignment:** Content is meticulously mapped to international regulatory frameworks, including ICAO, IMO, and IEEE, ensuring industry-relevant professional knowledge.
- **Practical Problem-Solving:** Includes a robust collection of solved numericals, short-answer questions, and MCQs designed to reinforce core technical concepts and examination readiness.
- **Project-Based Learning:** Features innovative "Project Ideas" covering UAV navigation and collision avoidance, helping students translate theoretical knowledge into functional

engineering solutions.

- **Advanced Radar Technologies:** Provides in-depth coverage of Phased Array Radar, SAR, and AESA systems, essential for modern surveillance and remote sensing applications.
- **Satellite Constellation Expertise:** Offers detailed analysis of GPS, GLONASS, and Galileo systems, including signal processing, error correction, and differential augmentation techniques.
- **Future-Ready Innovations:** Addresses emerging frontiers such as Quantum Navigation and AI-driven sensor fusion, preparing readers for the next generation of autonomous systems.
- **Multi-Domain Utility:** Delivers versatile insights applicable across civil aviation, defense, maritime safety, and space exploration, making it a comprehensive reference for various sectors

Table Of Contents

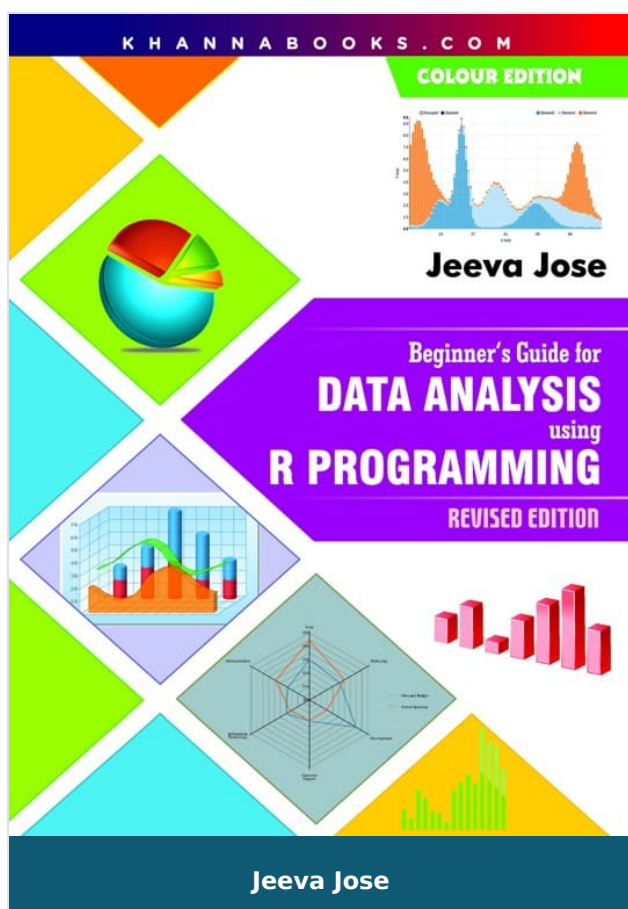
- Preface
- Acknowledgement
- Introduction to Radar and Radio Navigation
- Fundamentals of Electromagnetic Waves
- Principles of Radar Systems
- advanced radar Technologies and Applications
- Principles of Radio Aids to Navigation
- Ground-Based Radio Navigation Systems
- Satellite-Based Navigation Systems
- Integrated Navigation Systems
- Airborne Radar and Navigation Systems
- Maritime Radar and Radio Navigation
- Navigation in Space and Remote Sensing Applications
- Trends, Challenges and Future Directions
- Appendices

Author

A. B. Bhattacharya

Prof. A. B. Bhattacharya did his MSc and PhD degree from the University of Calcutta in Physics and Post-doc from the Massachusetts Institute of Technology (MIT), Cambridge, USA. He worked in close collaboration with the leading laboratories like Lincoln Laboratory; Milestone Hill Observatory; Earth, Atmospheric and Planetary Sciences division of MIT and many other well recognized laboratories in India and abroad. He served as Professor & Head of the Department of Physics, University of Kalyani; Dean of

Research and Head of the ECE Department, Techno India University; Pro Vice Chancellor of JIS University and Director of Brainware University. He has published 32 text books for Science and Engineering students, two popular books for general readers and over 400 research articles in reputed International Journals. Under his supervision 24 scholars received their doctoral degree. He is a fellow of the Institute of Electronics and Telecommunication Engineers and member of many scientific organizations. India International Friendship Society awarded him the prestigious "Shiksha Ratna Award" and Certificate of Excellence for meritorious services, outstanding performance and significant contribution to education. The International Institute of Success Awareness honored him with their globally recognized "Glory of India Gold Medal" for his outstanding contribution to the national stature of India. A few words from the certificate issued by Prof. Williams of MIT may be quoted "Our collaborative effort was directed at the wavelength dependence of radar echoes observations with the Millstone Hill UHF radar in Westford. He made use of the Charles River Data System computer in the Weather Radar Laboratory for these calculations. His results help to make a convincing case that the volume reflectivity associated with lighting is a diminishing function of radar wavelength, contrary to contemporary thinking". Dr.



Beginner's Guide for Data Analysis using R Programming

Author :	Jeeva Jose
ISBN 13 :	978-93-86173-45-4
ISBN 10 :	938617345X
E-ISBN 13 :	978-93-86173-45-4
Edition :	First
Pages :	368
Type of book :	Physical
Year :	2025
Language :	English
Publisher :	Khanna Publishing House
M.R.P :	Rs 450.00
Categories :	Computer Science Engineering, Emerging Technologies, Book Store, Best Sellers
Condition Type :	New
Country Origin :	India

Product Description

R programming is an efficient tool for statistical analysis of data. Data science has become critical to each field and the popularity of R is skyrocketing. Organization as large and diverse as Google, Facebook, Microsoft, Bank of America, Ford Motor Company, Mozilla, Thomas Cook, The New York Times, The National Weather Service, Twitter, ANZ Bank, Uber, Airbnb etc. have turned to R for reporting, analyzing and visualization of data, this book is for students and professionals of Mathematics, Statistics, Physics, Chemistry, Biology, Social Science and Medicine, Business, Engineering, Software, Information Technology, Sales, Bio Informatics, Pharmacy and any one, where data needs to be analyzed and represented graphically.

Salient features of the book:

1. Explains R concept in a simple method.
2. Best self-study material and reference guide.
3. Teaches how to apply various statistical methods to data science.
4. Help statistician and professional to leverage strength by combining their domain expertise with data analysis capability of R.
5. More than 300 solved and tested program provided.
6. A comprehensive book covering all areas of R in detail.

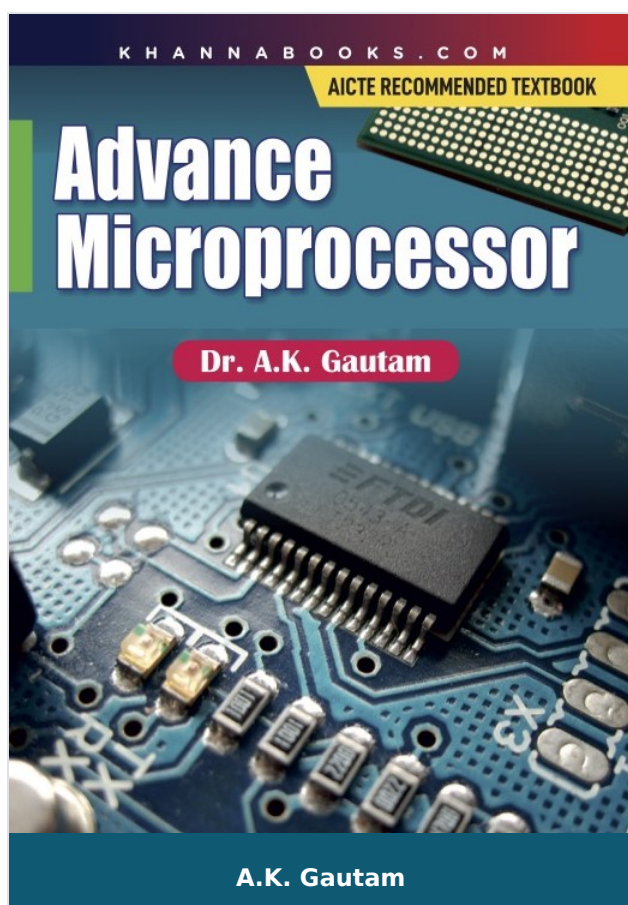
Table Of Contents

- Introduction
- Data Types & Operations
- Flow Control
- Functions and Packages
- Charts and Graphs
- Connecting R to External Interfaces
- Elementary Statistics
- Tests of Hypotheses
- Non Parametric Tests
- Analysis of Variance
- Basic Multivariate & Analysis
- Advanced Multivariate Analysis
- Advanced Graphs

Author

Jeeva Jose

Dr. Jeeva Jose completed Ph. D. in Computer Science from Mahatma Gandhi University, Kerala, India and is a faculty member at BPC College, Kerala. Her passion is teaching and areas of interests include world wide web, Data Mining and Cyber laws. She has been in higher education for the last 15 years and has completed three research projects funded by UGC and KSCSTE. She has published more than twenty research papers in various refereed journals and conference proceedings. She has edited three books and has given many invited talks in various conferences. She is a recipient of ACM-W Scholarship provided by Association for Computing Machinery, New York.



Advance Microprocessor

Author :	A.K. Gautam
ISBN 13 :	978-93-81068-92-2
ISBN 10 :	9381068925
E-ISBN 13 :	978-93-81068-92-2
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Pages :	424
Type of book :	Physical
Year :	2026
Language :	English
Publisher :	Khanna Publishing House
M.R.P :	Rs 599.00
Categories :	Electrical, Electronics & Communication Engineering, Book Store
Condition Type :	New
Country Origin :	India

Khanna Publishing House

4C/4344, Ansari Road, Daryaganj, New Delhi-110002

Email: contact@khannabooks.com | Tel: 011-2324 44 47 - 48 | Mobile: +91-99109 09320

Product Description

Each topic is well explained by illustration and photographs. The book covers basic microprocessors to advanced processors in a consistent progression from theoretical concept to design considerations. The operation of various microprocessors is described with the help of pin diagram, functional diagram and timing diagrams. A large number of working programs, problem, and the each chapter are summarized in the end.

Table Of Contents

- Introduction To Microprocessors
- The 8085 Microprocessor
- Architecture And Addressing Modes of The 16 bit 8086 Microprocessor
- The 8086/8088 Microprocessor CPU Module Design
- Assembly Language Programming
- Data Movement Instructions
- Arithmetic And Logic Instructions
- Program Control And Processor Control Instructions
- The 8087 Arithmetic Coprocessor
- Support Peripheral Devices
- Interrupt Structure Memory Interfacing And Modules
- The 8051 Micro Controller
- D/A and A/D Converters

Author

A.K. Gautam

A.K. Gautam Dr. A.K.Gautam received Ph. D. degree in Electronic Engineering from Indian institute of Technology. Banaras Hindu University, Varanasi, India, in 2007. prof. Gautam is a senior faculty member in the Department of Electronics & Communication Engineering. G.B. Pant Engineering College, Pauri Garwal, India. Dr. Gautam is an active member many academic committees of different Institute and Universities of repute. he is a member of IEEE (USA)



Smart Product Development

Author : N. Jeenath Shafana, Saral Jeeva Jothi

ISBN 13 : 978-93-55384-34-8

ISBN 10 : 9355384343

E-ISBN 13 : 978-93-55384-34-8

Edition : First

Pages : 132

Type of book : Physical

Year : 2026

Language : English

Publisher : Khanna Publishing House

M.R.P : Rs 198.00

Categories : [Computer Science Engineering,](#)
[New Arrivals, Book Store,](#)
[Sathyabama Series](#)

Condition Type : New

Country Origin : India

Product Description

This book is an indispensable resource for navigating the rapidly evolving landscape of smart technologies, where the integration of sensors and smart systems is pivotal for advancing functionality across a wide range of industries. Titled SMART PRODUCT DEVELOPMENT, this comprehensive guide is designed to equip its target audience—students, engineers, professionals, and technology enthusiasts—with the foundational knowledge and practical skills needed to master the complexities of modern connected devices.

The core purpose is to provide a deep, structured understanding of sensor devices—the eyes, ears, and nervous system of modern technology—their diverse applications, and their essential interfacing with Microcontroller Units (MCUs). The text begins by introducing fundamental sensor types, including piezoresistive, capacitive, and resonant sensors, detailing their design and real-world use in applications from wearable tech to autonomous vehicles.

Moving beyond hardware, the book thoroughly explores signal conditioning, digital conversion, and advanced control techniques such as state machines, fuzzy logic, and neural networks, showing how to integrate sensors into larger, reliable systems. Critical sections are dedicated to communication protocols (including wireless networks, RF sensing, and automotive standards) and the vital role of IEEE 1451 standards in ensuring system interoperability. Finally, the book connects theory to practice by examining real-world use cases in creating Smart Cities, covering applications in agriculture, health, disaster prevention, and water management, alongside the challenges of implementing AI and IoT at scale. This blend of theory, practical knowledge, and case studies makes it a crucial resource for aspiring engineers and industry experts.

Salient Features:

- **Sensor Fundamentals:** Provides comprehensive foundational insights into diverse sensor technologies, covering principles, classifications (active/passive), and detailed working mechanisms for types like piezoresistive and capacitive sensors.
- **Microcontroller Interfacing:** Focuses on how sensor data is processed, amplified, and conditioned for use, emphasizing Digital Conversion and the essential design considerations for effective MCU control in embedded systems.
- **Advanced Control Logic:** Explores modern automation and system behavior control using state machines, Fuzzy Logic systems for nuanced decision-making, and sensor control via Neural Networks.
- **Communication Protocols:** Deep dive into crucial standards for smart sensor connectivity, including wireless networks (Wi-Fi, Zigbee, Bluetooth), RF sensing, Telemetry, and specialized Automotive Protocols.
- **Industry Standards:** Details the architecture and benefits of the IEEE 1451 standards for smart sensors, ensuring necessary compatibility and interoperability between devices, control systems, and embedded technologies.
- **IoT Case Studies:** Presents transformative, real-world applications within the Smart Cities paradigm, covering sectors like smart agriculture, health, disaster prevention, and advanced water/waste management.
- **AI/ML Integration:** Discusses the challenges and solutions for developing AI and IoT systems at scale, covering predictive analytics, data quality, and the ethical considerations necessary for smart product success.

Table Of Contents

- Introduction to Sensor Devices
- Interfacing Sensor Information and MCU
- Control Techniques Standards
- Communication for Smart Sensors
- Smart Cities Uses Case

Author

N. Jeenath Shafana

N. Jeenath Shafana

Saral Jeeva Jothi

Saral Jeeva Jothi