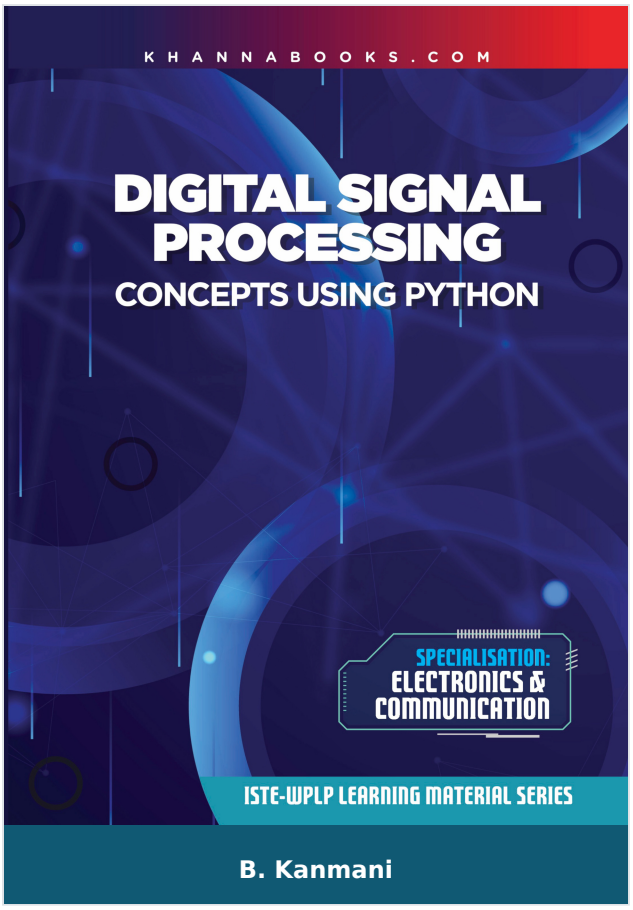

Digital Signal Processing Concepts Using Python

Author :	B. Kanmani
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Product Description

In this book, we have addressed various concepts in the typical Under Graduate course on, 'Digital Signal Processing'. The focus is to have a quick overview of the intended concept. This book is not a replacement to the prescribed text book in the curriculum. However, through the examples illustrated, it helps comprehend the concept. In addition, every Chapter of the book is accompanied by the link to the Python code is developed on the Goggle Colaboratory and hence is an Open source programming environment. No prior knowledge of Python is essential; however, and experience in any programming language will prove useful. The programming approach is to be able to develop the code for the concept from the mathematical equation and avoid the use of in-built functions. We would like to add that, we are using Python, purely to help comprehend the signal processing concept and not develop and efficient Python code. Experienced programmers may build alternate and efficient code.

The motivation for coming out with this compilation, is because, students are usually introduced to the required pre-requisitions in earlier courses. For example, the 'Engineering Mathematics', course is likely to have introduced Calculus (integration, differential equation, difference equation), Laplace Transform, Fourier series, Fourier Transform, Z-Transform. The courses on 'Analog Electronic Circuits and 'Network Analysis', is likely to have introduced basic electronic circuits including resistors, capacitors, inductors and Operational amplifiers, that require the need to obtain the transfer function, the response to a given output. The student is usually introduced to another independent programming language (C/C++/ Python/Matlab /Sci-lab/ R programming/any other), where the emphasis is on the syntax of the language. In this Book, we provide a brief introduction to every pre-requisite; explain the concept, together with few examples for every concept. In addition, wherever applicable, different methods of arriving at the given solution are also included. The concept of Digital Signal Processing

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is complete, even without any reference to Python. The reference to Python is purely for students to explore further.

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- Design and Analysis of IIR Filters

Author

B. Kanmani

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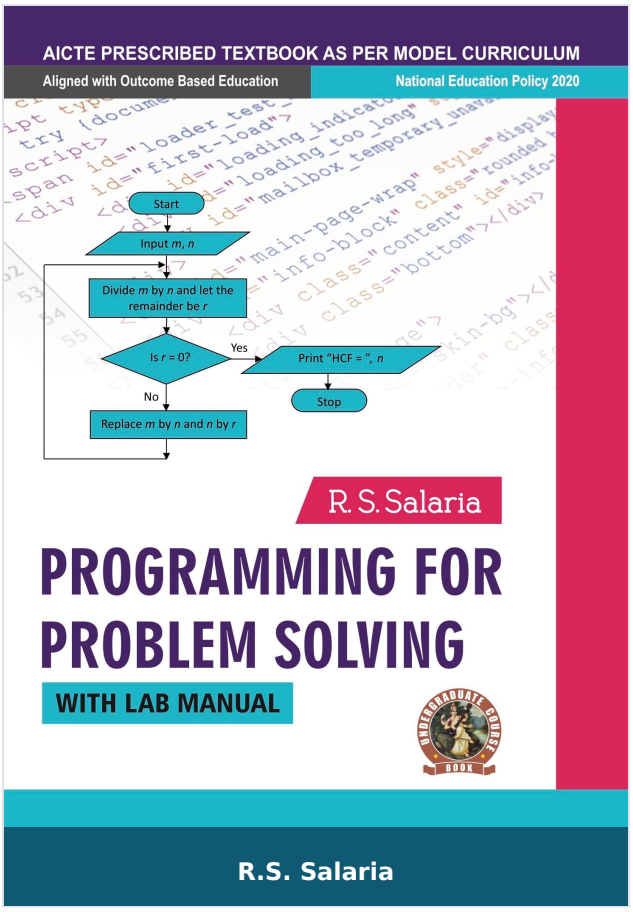

Programming for Problem Solving (with Lab Manual)

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Country Origin :	India

Product Description

This textbook is designed as per the model curriculum of AICTE for the first year students of all branches of undergraduate program in Engineering & Technology (BE/B. Tech). The subject of programming for problem Solving aims at developing problem solving skills among the students and the skills to create programs in C language for their implementation. This book emphasizes to empower the students to grasp the skills required for problem solving and to develop deep understanding of the constructs of C language. These aspects of the subject are well illustrated through enormous solved programming problems.

Salient Features:

1. Simple and lucid language that enables students to grasp the subject.
2. Demonstrates the elegant programming style.
3. 165+ ready to run programs for reference and to illustrate the program development process.
4. 135+ Short answer type questions to provide an opportunity for self-assessment of the fundamental concepts learned by answering them precisely.
5. 165+ multiple choice questions to provide an opportunity to synthesize the fundamental concepts.
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Author

R.S. Salaria

Prof. R.S. Salaria is a superior teacher, a prolific author and a great motivator. He is an alumnus of IIT, Delhi. He is a Certified Software Quality professional by Ministry of Information Technology, Govt. of India: Sun Certified Programmer as well as Sun Certified Trainer by SUN Microsystems. He is a life member of computer society of India, Mumbai: Institution of Electronics and Telecommunication Engineers, New Delhi: Indian Society for Technical Education, New Delhi: Punjab Academy of Sciences, Patiala. Presently, he is talking initiatives to Sensitize the citizens of this great country about their fundamental responsibilities towards society and seeking their contributions to make the society a wonderful place for happy and peaceful living. </p

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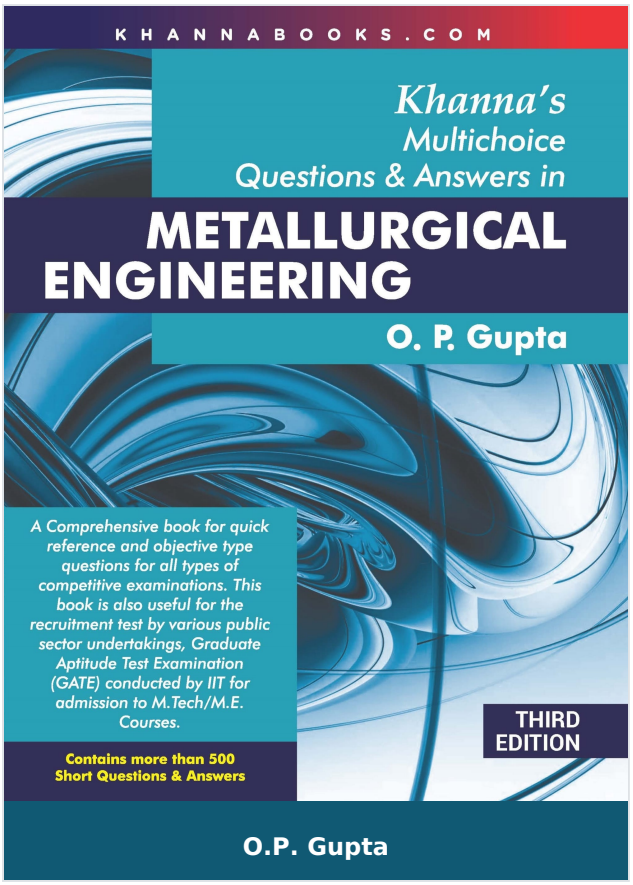

Khanna's Multichoice Questions & Answers in Metallurgical Engineering

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Product Description

This book is meant for diploma & degree student of metallurgical engineering for their academic programs as well as for various competitive examination for securing jobs. This book has been structured in three section. First section contains multiple choice type questions of various subjects of metallurgical engineering. Second section contains chapter wise question of GATE (Graduate Aptitude Test in Engineering) from 1991 to 2016. Third section contains SHORT QUESTIONS & ANSWERS in METALLURGICAL ENGINEERING. Fourth section contains APPENDICES containing Glossary of terms related to Metallurgical Engineering and Q&A of GATE-2017. This book has been designed to serve as "Hand Book of Metallurgical Engineering" which will be useful for various competitive examinations for recruitment in various public sector & Private Sector companies as well as for GATE Examination. Question have been arranged subject wise and answers are given at the bottom of the page.

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- Iron Making
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- Physical Metallurgy
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- Electrometallurgy and Corrosion
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- Physics of Metals
- Metallurgical Thermodynamics
- Metallurgical Kinetics
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- Metallurgical Thermodynamics
- Metallurgical Kinetics
- Miscellaneous Questions
- GATE– 2017
- Section- C Short Questions & Answers in Metallurgical Engineering
- Glossary

Author

O.P. Gupta

O.P. Gupta Om Prakash Gupta is basically being a chemical engineer, he has a practising experience of efficient Ennergy management and HR functions in steel Industry for more than three decades. privileged to be the youngest writer of technical books in the country (for he had written his first book at the age of 24 years while doing M. Tech. at I.I.T

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kanpur in 1979), he has authored many frontline books for engineering students. besides, being the regular faculty member in technical courses for Management Trainees (Technical), he has also visited england and france on a study tour sponsored by United Nations Development Programme (UNDP) to study the scope of energy conservation in steel plants in 1987.

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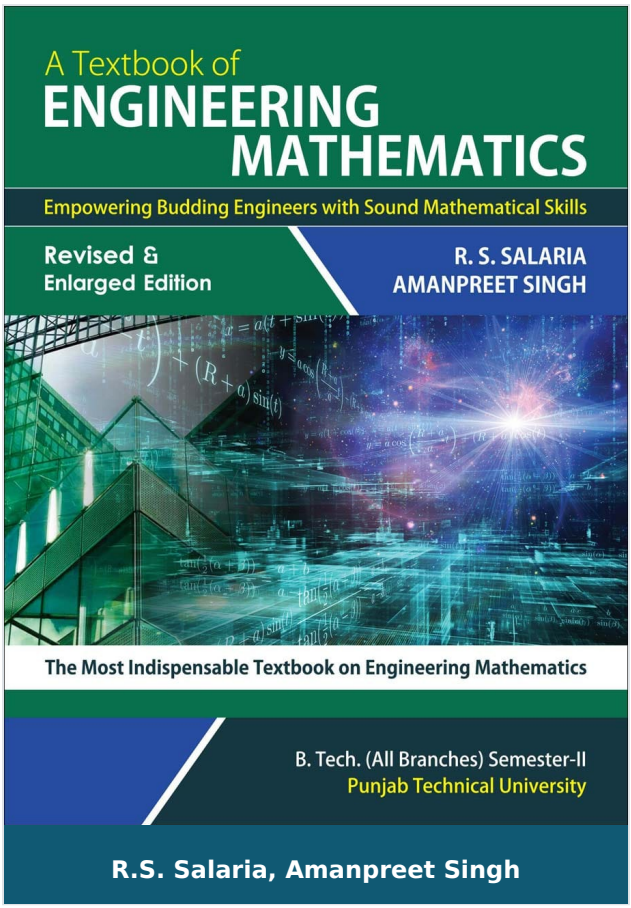

A Textbook of Engineering Mathematics (PTU-II)

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Product Description

The subject of Engineering Mathematics is an integral part of the course curriculum of bachelor of Engineering/Technology (BE/B. Tech) Program of All Indian Universities, and is taught in first and/or second semester(s). The present state of teaching and learning of Mathematics is not that encouraging. A lot has to be done on both the fronts.

The book in your hand is a first step of our commitment to uplift the standard of teaching and learning of Mathematics. We assure you that in our continuous journey in this endeavor and with your whole hearted support, we hope to make significant contribution in the teaching and learning of Mathematics. We hope to see that day when we hear from our students that Mathematics is wonderful subject and you all are relishing it.

This book is designed to serve as a textbook for the students of B. Tech. (All Branches) Semester-II of Punjab Technical University, Jalandhar.

While Writing, due care is taken to present the subject matter in a simple and illustrative manner so that a reader can grasp it with quite ease and can built basis and conceptual knowledge in the subject.

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- Liner Ordinary Differential Equations of Second and Higher Order
- Applications of Differential Equations
- Linear Algebra
- Infinite Series
- Complex Numbers

Author

R.S. Salaria

Prof. R.S. Salaria is a superior teacher, a prolific author and a great motivator. He is an alumnus of IIT, Delhi. He is a Certified Software Quality professional by Ministry of Information Technology, Govt. of India: Sun Certified Programmer as well as Sun Certified Trainer by SUN Microsystems. He is a life member of computer society of India, Mumbai: Institution of Electronics and Telecommunication Engineers, New Delhi: Indian Society for Technical Education, New Delhi: Punjab Academy of Sciences, Patiala. Presently, he is talking initiatives to Sensitize the citizens of this great country about their fundamental responsibilities towards society and seeking their contributions to make the society a wonderful place for happy and peaceful living. </p

Amanpreet Singh

Amanpreet Singh Amanpreet Singh SGTB Khalsha College, Anandpur Sahib, Formerly with Rayat-Bahra Institute of Engineering& Nano Technology, Hoshiarpur.

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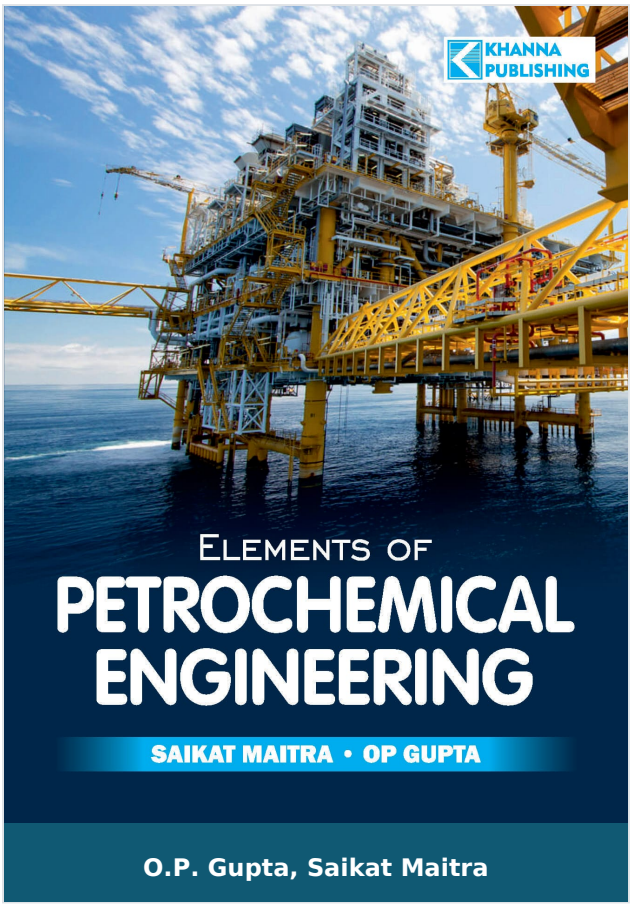

Elements of Petrochemical Engineering

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Product Description

Elements of Petrochemical Engineering book is meant for the students, teachers and practicing Engineers. This book contains the manufacture, properties and applications of important petrochemicals. Important information's about feedstocks and applications of petrochemical derived products, status of Indian Petrochemical Industry and environment standards for the petrochemical plant are given in the appendices. It also contains short questions and answers and multiple choice questions and answers drawn from examination papers of various engineering colleges for the benefits of the students.

The book is targeted to benefit the following :

Diploma in Engineering Students, Degree in Engineering Students, AMIE AMIIM, AMIICHE students, Faculty members and teaching staff, Practicing Engineers/Professionals. Latest and updated information/ data/statistics pertaining to the subject matter has been included in the edition for the benefit of the readers.

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- Production of Benzene by Hydrodealkylation of Tolune
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O.P. Gupta Om Prakash Gupta is basically being a chemical engineer, he has a practising experience of efficient Ennergy management and HR functions in steel Industry for more than three decades. privileged to be the youngest writer of technical books in the country (for he had written his first book at the age of 24 years while doing M. Tech. at I.I.T kanpur in 1979), he has authored many frontline books for engineering students. besides, being the regular faculty member in technical courses for Management Trainees (Technical), he has also visited england and france on a study tour sponsored by United Nations Development Programme (UNDP) to study the scope of energy conservation in steel plants in 1987.

Saikat Maitra

Prof. Saikat Maitra is presently working as the Vice Chancellor of Maulana Abul Kalam Azad University of Technology, West Bengal (formerly West Bengal University of Technology). He did his B.Sc (Honours in Chemistry) from the Presidency Colleges, Kolkata, B.Tech, M.Tech and Ph.D in Chemical Technology from the University of Calcutta. He is a Chartered Chemical Engineer and Fellow of Institute of Engineers (India). Prof. Maitra earlier worked as Professor and Principal-in-Charge at Government College of Engineering; Ceramic Technology, Associate Professor at University Technology Petronas, Malasiya and as Scientist at Central Fuel Research Institute, Dhanbad. He has worked in industries too. Prof. Maitra published 150 research papers in different national & international journals, presented 60 papers in different conferences, filed two patents, authored three books and three book chapters. He has guided twelve Ph.D students, completed several funded research projects, organized several training programmes and workshops. He visited many countries like US, Australia, Italy, Malasiya, Singapore, Thailand, Bangladesh, Baharain etc for delivering lecturers.

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Mastering Android

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Product Description

WebTech solutions Inc. is one of the pioneers of the technology industry. WebTech solution Inc. is a leading IT development company bringing the latest technologies in a short span of time. Its professional research team aims to deliver the latest information on the best way to analyze, develop, test, debug and tune best development skills including technical coding and theoretical concepts of IT. Its main aim is committed to excellence; excellence in its range and quality of publishing; excellence in dedication to its authors and excellence in the service it provides to the readers. By way of this book, Mastering PHP has become faster and easier as all the relevant information and step-by-step approach has been followed in simple plain English. It is designed very systemically and logically. The basic concepts have been taught in-depth with lots of examples and screen shots. A large number of unsolved as well as solved exercises have been included for the benefit of the readers.

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Author

WebTech Sol.

WebTech Sol. WebTech Solutions Inc. is one of the pioneers of the technology industry. Webtech Solution Inc. is a leading IT development company bringing the latest technologies in a short span of time. Its professional research team aims to deliver the latest information on the best ways to analyze, develop, test, debug and tune best development skills including technical coding and theoretical concepts of IT. Its main aim

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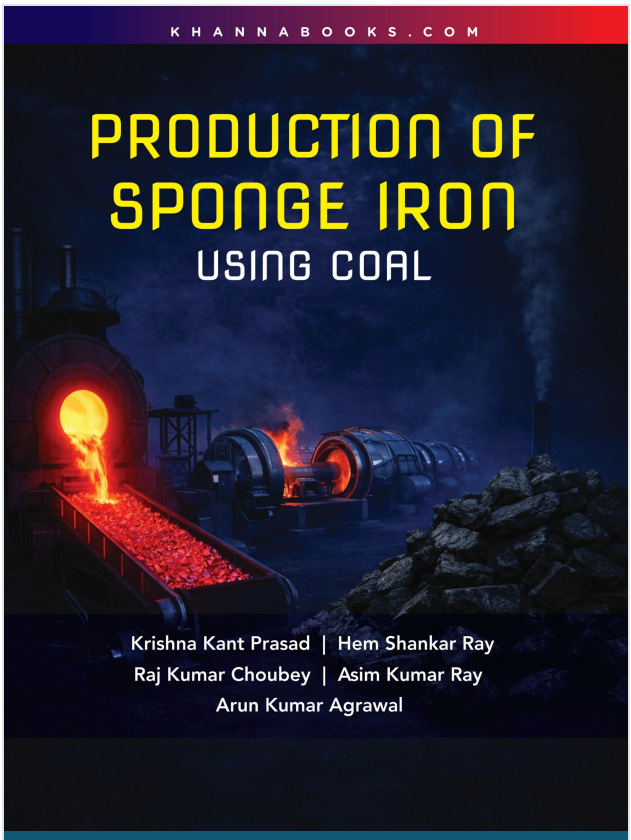

Krishna Kant Prasad, Hem Shankar Ray, Raj Kumar Choubey, Asim Kumar Ray, Arun Kumar Agarwal

Production of Sponge Iron Using COAL

Author :	Krishna Kant Prasad, Hem Shankar Ray, Raj Kumar Choubey, Asim Kumar Ray, Arun Kumar Agarwal
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Product Description

Production of Sponge Iron Using COAL

Production of Sponge Iron using Coal: Rotary Kiln, Tunnel Kiln and using Gas from Coal is a definitive technical guide that explores India's global leadership in the coal-based direct reduction of iron ore. While international markets often rely on gas-based shaft processes, this book highlights how India has pioneered and perfected the use of rotary kilns to utilize abundant, high-ash non-coking coal-resources often dismissed by foreign experts as "muck". The text provides an exhaustive analysis of the thermodynamic, kinetic, and aerodynamic principles that govern the solid-state reduction of iron oxides.

The book serves as a vital bridge between theoretical research and industrial application, documenting decades of expertise from leading metallurgists. It broadens the traditional focus on rotary kilns to include emerging commercial successes in tunnel kiln technology and coal gasification-based shaft furnaces. Beyond technical specifications, the authors connect modern engineering with India's ancient metallurgical heritage, such as the storied Iron Pillar of Delhi. This work is an essential resource for metallurgical students, researchers, industry professionals, and entrepreneurs seeking to understand the economic and technical nuances of sustainable ironmaking in coal-rich regions.

Salient Features

- Rotary Kiln Dominance: Detailed analysis of the rotary kiln's primary role in India, covering its versatility in processing lump hematite and its unique operational strengths and weaknesses.
- Scientific Process Modeling: Comprehensive chapters on mathematical modeling, CFD analysis, and reaction kinetics that allow for precise control over heat transfer and solid movement.

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- Alternative Reduction Technologies: In-depth exploration of tunnel kilns as a viable solution for reducing magnetite and iron ore fines, filling a critical gap in traditional kiln operations.
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- Resource Optimization: Strategies for utilizing high-ash Indian coal and recirculating char to enhance energy efficiency and reduce the environmental footprint of ironmaking.
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- Addendum

Author

Krishna Kant Prasad

Dr. Krishna Kant Prasad (born on 24th January 1945 in Bhagalpur, Bihar), after completing B.Sc. Hons. (Chem.) from Bhagalpur University, he did his B.E., M.E. and Ph.D. in Metallurgical Engineering from the Indian Institute of Science, Bangalore. After brief teaching stints at the Banaras Hindu University and MR Engineering College, Jaipur he joined R&D Division of Tata Steel, Jamshedpur in 1972. He moved to RDCIS, SAIL, Ranchi in 1981 as in-charge of R&D activities in the Sponge Iron Pilot Plant Complex and since then he was actively involved in steering R&D activities both in Sponge Iron Making and Alternate Iron Making areas. He retired from SAIL, in January 2006. Thereafter, he served as a visiting professor in the Department of Metallurgical Engineering in IT (now IIT), BHU, Varanasi, for two and then joined NITK (National Institute of Technology Karnataka) in Surathkal, initially as the Ministry of Steel Chair Professor, and then in various capacities - all equivalent to a visiting professor - for seven and a half years. Dr. Prasad has guided four Ph.D. students. He has to his credit over 130 research papers, five registered copyrights and holds two patents on sponge iron making. He has authored four books entitled Sponge Iron Making in Rotary Kiln, Chemical and Metallurgical Thermodynamics, Advances in Rotary Kiln Sponge Iron Plant and Integrated Iron- and Steelmaking. He has also edited two books - "Trends in Beneficiation and Agglomeration of Iron Ore' and 'Steel Plant Technologies: An Overview. He is life member of the Indian Institute of Metals, Electrochemical Society of India and the Computer Society of India. E-mail: kkpmprnc@gmail.com. Professor

Hem Shankar Ray

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Raj Kumar Choubey

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Asim Kumar Ray

Dr. Asim Kumar Ray was born at Calcutta in 1952. He graduated with Honours in Chemical Engineering from Jadavpur University in 1974. He did his Masters in Chemical Engineering from IIT Kanpur and Ph. D. in Metallurgical Engineering from IIT Kharagpur. After a brief stay of about one and a half year each at Indian Iron and Steel Company, Burnpur and Indian Oil Corporation, he joined Research & Development Centre for Iron & Steel (RDCIS), SAIL, Ranchi in 1978. After a long stay at RDCIS, SAIL, Ranchi, he assumed charge of General Manager (Quality) at Durgapur Steel Plant (DSP), SAIL in 2008. Dr Ray was instrumental in commissioning Sponge Iron Pilot Plant and associated Process Research Laboratory and carried out R & D activities related to Sponge Iron & other Alternate Iron Making processes, Steelmaking and Continuous Casting. He established Computational Laboratory at RDCIS and carried out mathematical and physical simulation of different metallurgical processes. He steered several projects on process improvement and product development in all SAIL plants. Under his leadership, DSP had received several awards on Quality including prestigious Golden Peacock Award on Quality -2010 of Institution of Directors (IOD). Dr. Ray retired from SAIL in December 2012. Presently, Dr. Ray is with M/s Lechler (India) Pvt. Ltd. Dr. Ray has co-authored the Book on "Rotary

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Mathematics - I

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“Mathematics-I” is included as a paper for the first year Diploma program. Syllabus of this book is strictly aligned as per model curriculum of AICTE, and academic content is combined with the concept of outcome-based education.

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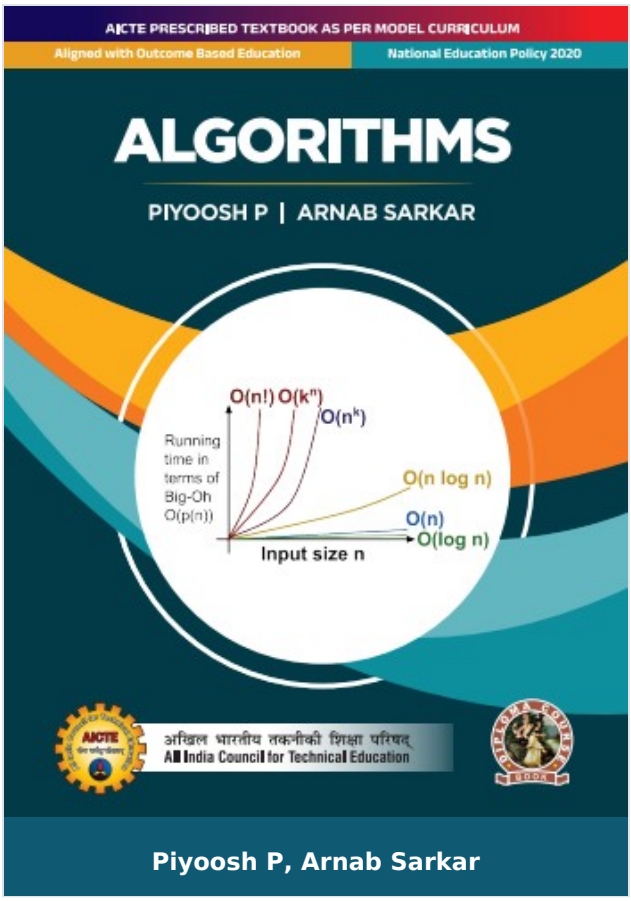

Algorithms

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Product Description

Algorithms

This book presents data structures and algorithms whose knowledge is indispensable to effective computer programming. Design of algorithms strategies for different types of applications as well as techniques for analyzing them have been introduced, so that the students gain an understanding of mechanisms for constructing correct and efficient software programs. The main content of this book is aligned with the model curriculum of AICTE followed by the concept of outcome-based education as per National Education Policy (NEP) 2020.

Salient features:

- Content of the book aligned with the mapping course outcomes, programs and Units 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.
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- 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.
- Short questions, objective questions and long answer exercises are given for practice of students after every unit.

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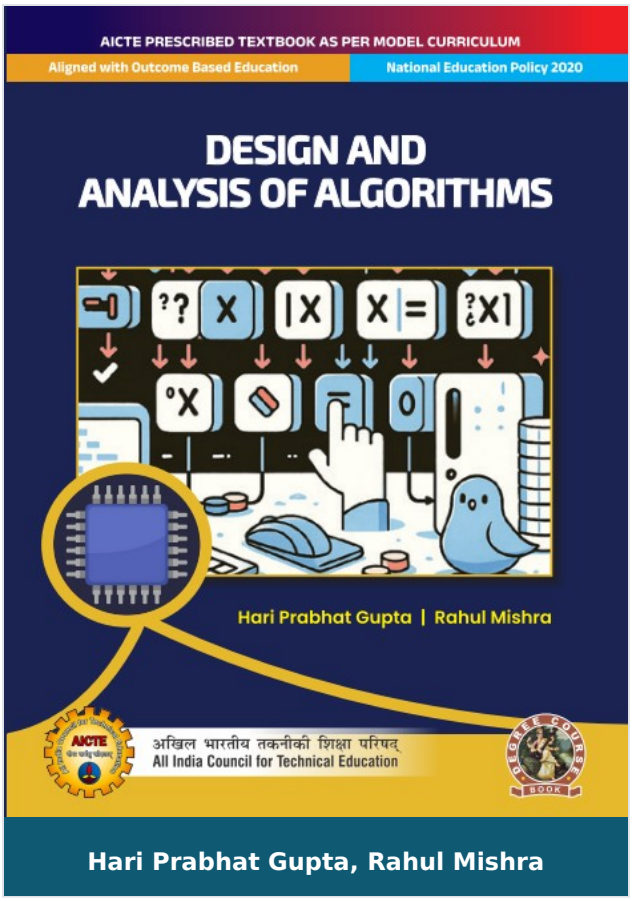

Design and Analysis of Algorithms

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This book offers an in-depth exploration of designing and analysing algorithms. It covers topics such as algorithmic analysis, design principles, theoretical proofs, and practical applications. The content includes a logical example explaining the concepts, accompanied by a diverse range of solved and unsolved problems. Each problem is accompanied by step-by-step solutions, providing readers with a comprehensive understanding of algorithmic design and analysis. With its systematic approach, programming-based solutions, and thorough examples, this book serves as an ideal resource for those curious to learn basic to high level concept of algorithm design.

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