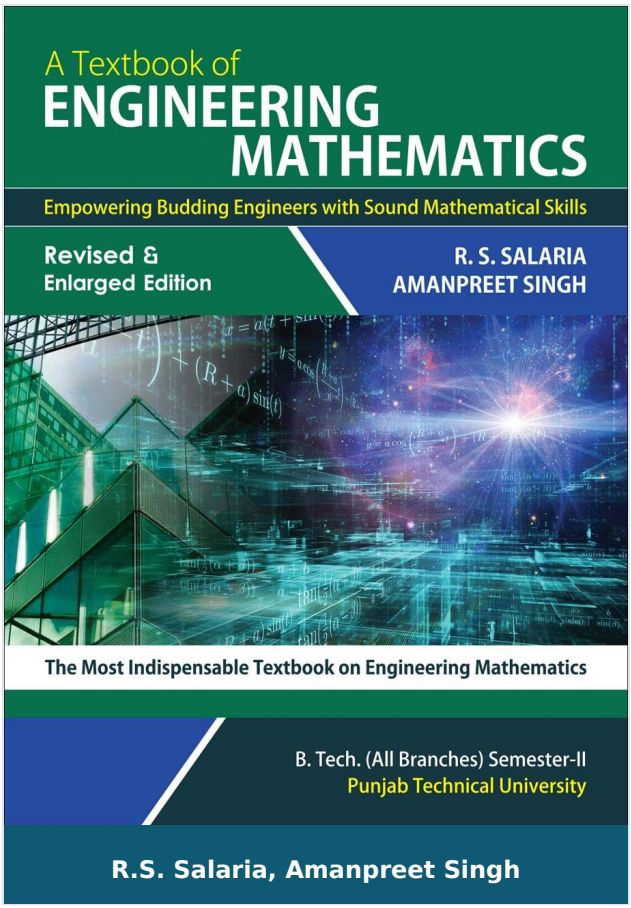

A Textbook of Engineering Mathematics (PTU-II)

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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.

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- Applications of Differential Equations
- Linear Algebra
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- 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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- Functions and Limit.
- Differential Calculus.
- Complex Numbers and Partial Fraction.
- Permutation and Combination, Binomial Theorem.
- Appendices
- References for Further Learning
- CO and PO attainment Table
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Author

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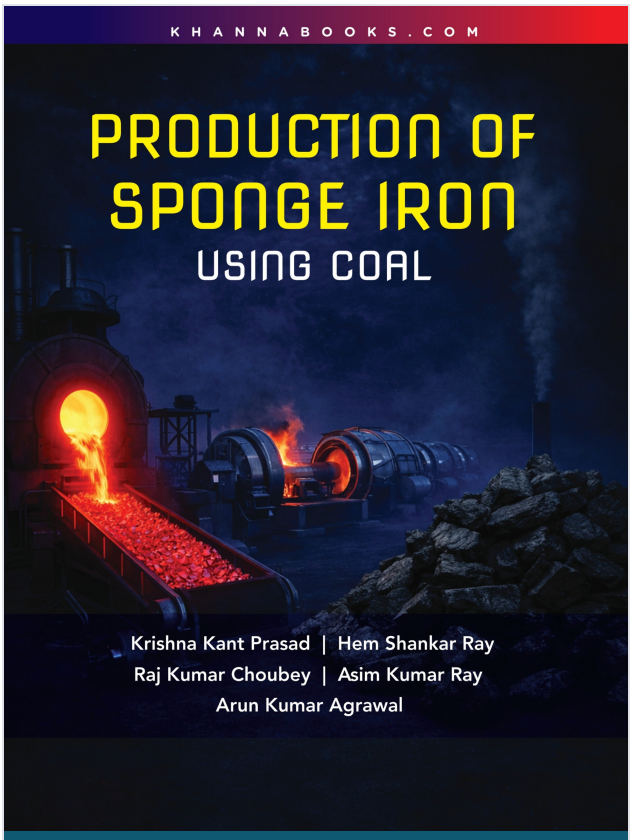

Krishna Kant Prasad, Hem Shankar Ray, Raj Kumar Choubey, Asim Kumar Ray, Arun Kumar Agarwal

Production of Sponge Iron Using COAL

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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.
- Practical Engineering Focus: Guidance on plant design, refractory management, and overcoming common industrial hurdles like accretion or "ring formation" inside kilns.
- Historical Contextualization: A unique addendum on India's ancient ironmaking legacy, offering a perspective on the longevity and evolution of sponge iron technology.
- Future-Ready Strategies: Critical projections on hydrogen-based ironmaking and the integration of sponge iron into blast furnaces to reduce costly metallurgical coke consumption.

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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

Hem Shankar Ray (born on 19th June 1940, Jabalpur, Madhya Pradesh) unfortunately left for his heavenly abode on 28th April 2023 just as the preparation of the manuscript

started. Prof. H. S. Ray is widely regarded as one of the greatest minds of the Indian scientific community and a very well-known name in the field of Extractive Metallurgy. He obtained his B.Tech. (Hons.) in Metallurgical Engineering from the Indian Institute of Technology, Kharagpur (1962) and M.A.Sc. and Ph.D. degrees from the University of Toronto, Canada (1963, 67). He was with I.I.T. Kanpur from 1967-80 as Lecturer and Asst. Professor. In between he served as Manager/Senior Technologist - Research and Development, Pilkington Research Centre, Lathom, England (1977-1979). He then served as Professor of Metallurgical Engineering (1980-1990) and Dean of Students Affairs (1988-90) at the Indian Institute of Technology, Kharagpur. Prof. Ray served the Regional Research Laboratory, Bhubaneswar (now IMMTD) as Director from 1990-2000 (two terms). On retirement he served as an Emeritus Scientist at the Central Glass and Ceramic Research Institute, Calcutta. He holds several patents including 2 U.S. patents to his credit. His areas of interest included thermal analysis, kinetics, extractive metallurgy, energy and R&D administration. He guided about 40 Ph.D. students and 20 M.Tech. students for their thesis work. He has published about 500 papers in reviewed journals and conference proceedings and over 26 books. He also edited 15 Conference proceedings and written about 50 technical reports. He also wrote numerous other non-technical articles, editorials, etc. Prof. Ray received several awards in recognition of his work and these include the National Metallurgists Day Award, G.D. Birla Award and two Kamani Gold Medals of the Indian Institute of Metals. He received the Distinguished Alumni award from IIT Kharagpur, which, interestingly, he shared that year with the Google CEO, Sundar Pichai. He served several companies and R&D laboratories as consultant or member of Boards/Research Councils. He was associated with several Professional Bodies and served as President, Indian Institute of Mineral Engineers and Indian Thermal Analysis Society; also, as a Vice President of the Millennium Institute of Energy and Environment Management and was an Editor of a popular science magazine Everyman's Science. He also served in several other institutions in various capacities. He was deeply involved with professional bodies such as IIM (Indian Institute of Metals),

MIEEM (Millennium Institute of Energy and Environmental Management), IAPQR (Indian Association for Productivity, Quality and Reliability) etc. and used to be regular and most 0sought-after speaker in their seminars/workshops. Apart from his stellar achievements in the world of academics, Prof Ray was well known for his interests and capabilities in other spheres of life such as Music and Art. His creative abilities spanned far and wide across writing books of both scientific and nonscientific nature, proficiency in several musical instruments like Guitar, Tabla, Violin and Esraj and painting in both oil and water colour. His office workspace at his home housed an eclectic mix of all forms of Arts. His most unusual interest was in Magic. He had a keen interest in the subject and built several magic tricks himself. He also performed in public as a professional magician. Prof Ray was a great friend to all his colleagues and students. His abilities to build positivity in all his circles made him stand out as an exceptional human being. His associations with people were lifelong. He held deep respect for all his relationships and loved nurturing the young and rising. From writing science fiction books for teenagers to help inculcate interest in core science in school to mentoring startups in science and tech and to helping and problem solving institutions to break through status quo to push forward, Prof Ray had pretty much done it all. He remained a self-driven human being with natural leaderships skills combined with motivating and inspiring others to rise, right till the end. Sri

Raj Kumar Choubey

Raj Kumar Choubey , was born on August 11, 1954 at Sikariya, Bhojpur, Bihar (unfortunately he passed away on February 19, 2024). He passed B.Sc. from the University of Burdwan in 1974 and Bachelor of Engineering from MREC (now MNIT) in Jaipur Rajasthan in the year 1980. He joined M/s Jaipur Metals and Electricals in 1980 and operated the first induction furnace of India. In 1982 he joined M/s Hindustan Motors and served till the year 2000. There he developed various grades of automobile grade steel and was a part of the team who fabricated the first Diesel Engine for automobiles in India. Thereafter he decided to be a start-up entrepreneur. His portfolio lately read: Owner -

Metcon Power Consultant & Engineers, Kolkata, having global clients base including Tata Steel and Jindal Steel. Director - Bhagwati Power & Steel Limited, Raipur, CG. Director - RNT Medicare Private Limited, Kolkata. Partner - Premier Hygienic Services, Kolkata. He involved himself in innovation and setting up commercial plants based on self developed technology for: Manufacturing DRI (Sponge Iron) from Mill Scale, DRI through Tunnel Kiln Technology, Development of Metallic Saggers for reduction of Iron Ore, Process for reduction of Chromite Ore at lower temperature, Extraction of liquid fuel from waste plastic, Recycling of Steel Plant wastes Development of Binders for agglomeration Address: Metcon House, North Bazar, Post: Andal - 713321, District: Paschim Bardhman, West Bengal. Email: choubey@metconpower.in, Website: www.metconpower.in. Dr.

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

Kiln Sponge Ironmaking". He has to his credit about 140 research publications and three patents. Shri Arun Kumar Agrawal , born in 1963, is a 1985 metallurgical engineering graduate from the then Institute of Technology, Banaras Hindu University (IT-BHU - now IIT-BHU), Varanasi. He joined MECON Limited, Ranchi in the year 1986 as Management Trainee (Technical) after one year stint in Hindustan Aluminium Co. (Hindalco - Aditya Birla Group) at Renukoot in Uttar Pradesh. He joined the Iron Making Division of MECON and was deeply involved in the basic engineering and design, detailed engineering, consultancy and project management as well as site services of various Iron Making Projects particularly DR (Direct reduction) projects - both coal and gas based. In Blast Furnace area, he was the co-ordinator for NMDC Blast Furnace in Nagarnar and 1.2 mtpa Blast Furnace Complex of M/s PTKS, Indonesia. He was involved in engineering of a number of coal and gas-based DR projects, most prominent being world's first syngas-based DR plant in Angul for JSPL. He possesses over 37 years of varied and rich experiences in Iron and Steel technology, conceptualisation of projects along the entire value chain and development of process flow sheets, making and guiding the preparation of multitudes of reports, etc. Besides he has rendered expert services to Ministry of Steel (MOS) by being part of several committees, policy and norms formulation and their subsequent regulation as well as handling of diverse technical queries. In the process he immensely contributed to the development and growth of Indian Steel Industry. Shri Agrawal was deeply involved in all business verticals of MECON Limited, both technical & commercial. During his illustrious career, he displayed rare strategic insight and business acumen for enhancing company's business prospects. Shri Agrawal rose to the level of Director (Technical) of MECON in June, 2020 and continued for three years before superannuation in 2023. Under his leadership, a new Design Cell was created to develop specific tailor-made innovative designs and engineering solutions for new application and import substitutions. He was instrumental in launching of company's in-house prestigious quarterly technical journal "Techquest" to provide platform for sharing technical knowledge as well as unique design, engineering & project experiences and site based

solutions among the engineers to help them learn from each other's experience and make constant improvement in their subsequent endeavours.

Arun Kumar Agarwal

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 (born on 19th June 1940, Jabalpur, Madhya Pradesh) unfortunately left for his heavenly abode on 28th April 2023 just as the preparation of the manuscript started. Prof. H. S. Ray is widely regarded as one of the greatest minds of the Indian scientific community and a very well-known name in the field of Extractive Metallurgy. He obtained his B.Tech. (Hons.) in Metallurgical Engineering

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the world of academics, Prof Ray was well known for his interests and capabilities in other spheres of life such as Music and Art. His creative abilities spanned far and wide across writing books of both scientific and nonscientific nature, proficiency in several musical instruments like Guitar, Tabla, Violin and Esraj and painting in both oil and water colour. His office workspace at his home housed an eclectic mix of all forms of Arts. His most unusual interest was in Magic. He had a keen interest in the subject and built several magic tricks himself. He also performed in public as a professional magician. Prof Ray was a great friend to all his colleagues and students. His abilities to build positivity in all his circles made him stand out as an exceptional human being. His associations with people were lifelong. He held deep respect for all his relationships and loved nurturing the young and rising. From writing science fiction books for teenagers to help inculcate interest in core science in school to mentoring startups in science and tech and to helping and problem solving institutions to break through status quo to push forward, Prof Ray had pretty much done it all. He remained a self-driven human being with natural leaderships skills combined with motivating and inspiring others to rise, right till the end. Sri Raj Kumar Choubey , was born on August 11, 1954 at Sikariya, Bhojpur, Bihar (unfortunately he passed away on February 19, 2024). He passed B.Sc. from the University of Burdwan in 1974 and Bachelor of Engineering from MREC (now MNIT) in Jaipur Rajasthan in the year 1980. He joined M/s Jaipur Metals and Electricals in 1980 and operated the first induction furnace of India. In 1982 he joined M/s Hindustan Motors and served till the year 2000. There he developed various grades of automobile grade steel and was a part of the team who fabricated the first Diesel Engine for automobiles in India. Thereafter he decided to be a start-up entrepreneur. His portfolio lately read: Owner - Metcon Power Consultant & Engineers, Kolkata, having global clients base including Tata Steel and Jindal Steel. Director - Bhagwati Power & Steel Limited, Raipur, CG. Director - RNT Medicare Private Limited, Kolkata. Partner - Premier Hygienic Services, Kolkata. He involved himself in innovation and setting up commercial plants based on self developed technology for: Manufacturing DRI (Sponge Iron) from Mill Scale, DRI through Tunnel Kiln Technology,

Development of Metallic Saggers for reduction of Iron Ore, Process for reduction of Chromite Ore at lower temperature, Extraction of liquid fuel from waste plastic, Recycling of Steel Plant wastes Development of Binders for agglomeration Address: Metcon House, North Bazar, Post: Andal - 713321, District: Paschim Bardhman, West Bengal. Email: choubey@metconpower.in, Website: www.metconpower.in. 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 Kiln Sponge Ironmaking". He has to his credit about 140 research publications and three patents. Shri Arun Kumar Agrawal , born in 1963, is a 1985 metallurgical engineering graduate from the then Institute of Technology, Banaras Hindu University (IT-BHU - now IIT-BHU), Varanasi. He joined MECON Limited, Ranchi in the year 1986 as Management Trainee (Technical) after one year stint in Hindustan Aluminium Co. (Hindalco - Aditya Birla Group) at Renukoot in Uttar Pradesh. He joined the Iron Making Division of MECON and was deeply involved in the basic engineering and design, detailed engineering, consultancy and project management as

well as site services of various Iron Making Projects particularly DR (Direct reduction) projects - both coal and gas based. In Blast Furnace area, he was the co-ordinator for NMDC Blast Furnace in Nagarnar and 1.2 mtpa Blast Furnace Complex of M/s PTKS, Indonesia. He was involved in engineering of a number of coal and gas-based DR projects, most prominent being world's first syngas-based DR plant in Angul for JSPL. He possesses over 37 years of varied and rich experiences in Iron and Steel technology, conceptualisation of projects along the entire value chain and development of process flow sheets, making and guiding the preparation of multitudes of reports, etc. Besides he has rendered expert services to Ministry of Steel (MOS) by being part of several committees, policy and norms formulation and their subsequent regulation as well as handling of diverse technical queries. In the process he immensely contributed to the development and growth of Indian Steel Industry. Shri Agrawal was deeply involved in all business verticals of MECON Limited, both technical & commercial. During his illustrious career, he displayed rare strategic insight and business acumen for enhancing company's business prospects. Shri Agrawal rose to the level of Director (Technical) of MECON in June, 2020 and continued for three years before superannuation in 2023. Under his leadership, a new Design Cell was created to develop specific tailor-made innovative designs and engineering solutions for new application and import substitutions. He was instrumental in launching of company's in-house prestigious quarterly technical journal "Techquest" to provide platform for sharing technical knowledge as well as unique design, engineering & project experiences and site based solutions among the engineers to help them learn from each other's experience and make constant improvement in their subsequent endeavours.

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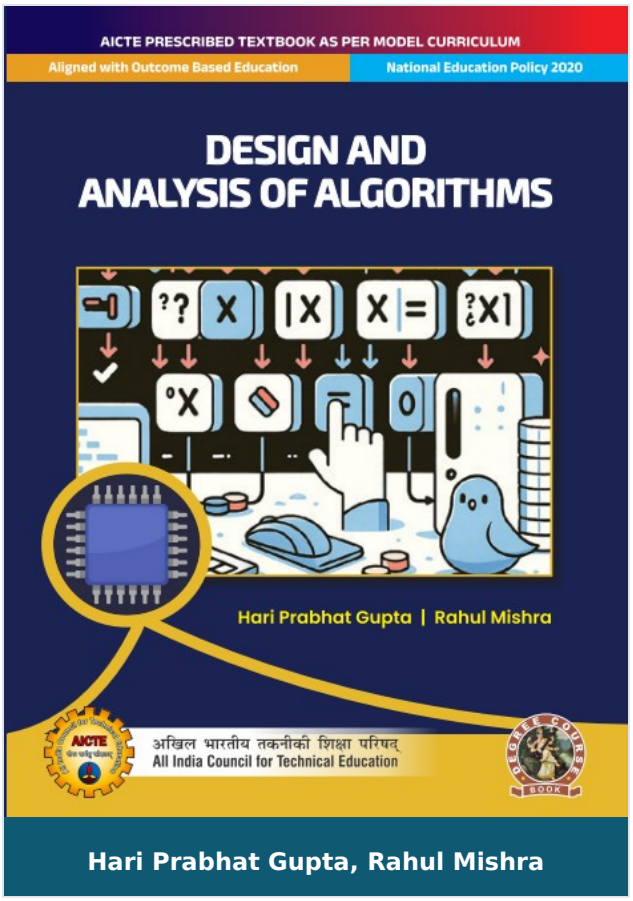

Design and Analysis of Algorithms

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Product Description

Design and Analysis of Algorithms

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.

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 of him/ her after completing that unit.
- Book provides lots of recent information, interesting facts, logical examples, and solved programming exercises. Theorems and their proofs are added to provide detailed insight of analysis.
- Student and teacher centric subject material included in book in balanced and chronological manner.
- Figures, tables, and image-based elaborate examples are inserted to improve clarity of the topics. Salient Features:
- Short and long answer questions are given for practice of students after every chapter for practice of students after every chapter.

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- Solved and Unsolved programming exercises are included in the appendix of the book.
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Rahul Mishra

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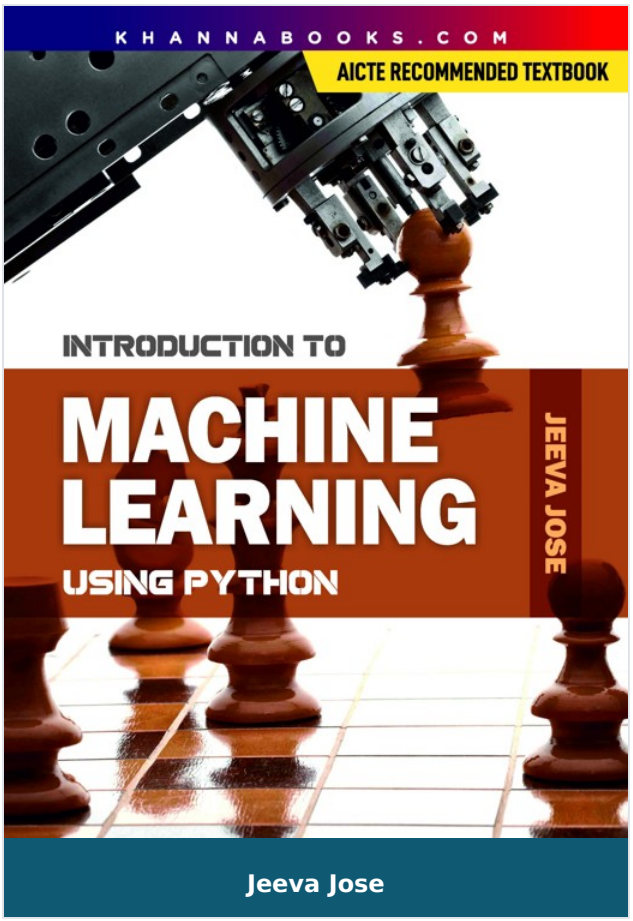

Introduction to Machine Learning

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- Advance Multivariate Analysis
- Semi-supervised, Reinforcement & Active Learning
- Deep Learning
- Introduction to TensorFlow
- Regression using TensorFlow
- Artificial Neural Networks using TensorFlow

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.

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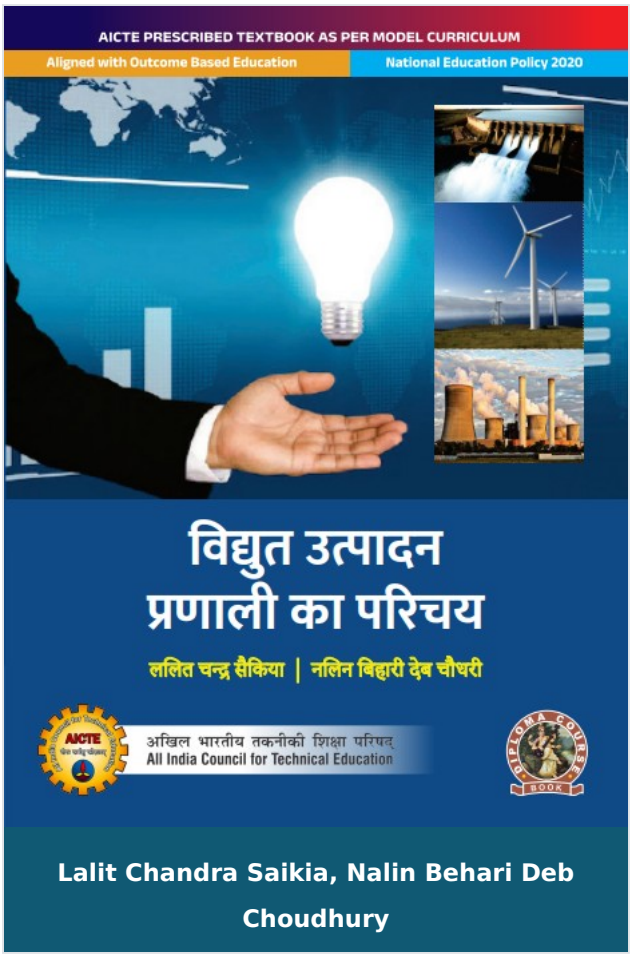

Introduction to Electric Generation Systems

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Case Studies in Construction Project Management

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Product Description

Case studies in this book show how project were completed because of initiatives and out-of- the -box thinking.

This book is to provide young architects and engineers insight into evolving innovates solution in dealing with complex situations that during implementation of construction projects.

Majority of cases reflect personal experience of the authors in their professional career.

Engineering profession is difficult and exciting as solutions are to be found at each & every stage of the project.

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- Central Government office Building at Lucknow.
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- Siddarth Raj Marg Nepal.
- Pasighat Pangin Road Arunachal Pradesh.
- Yingkiyong Damroh Road Arunachal Pradesh.
- ISBT Flyover and Yudhister Setu Across River Yamuna Delhi.

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- Loni Road Flyover wth Precast Prestressed Girders.
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- Extension and Strengthening of Runway at Port Blair Airport, Andaman and Nicobar Islands.
- Underpass at Madhuban Chowk on Outer Ring Road, Delhi.
- The Signature Bridge on River Yamuna.

Author

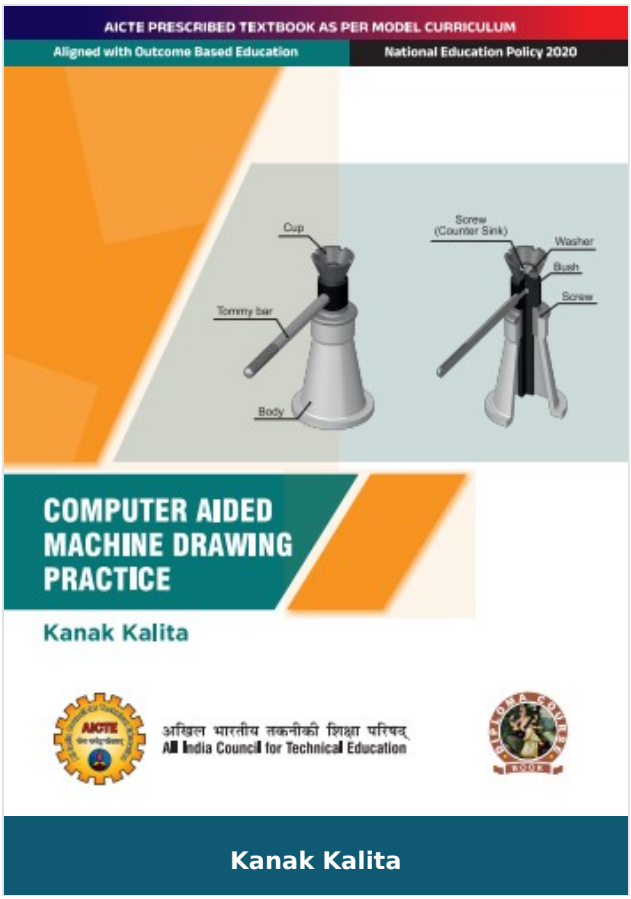
K. B. Rajoria

K. B. RAJORIA K B Rajoria did BE (Hons) in Civil Engineering from MBA Engineering College, Jodhpur in 1961 and ME (Gold Medallist) , in Soil Mechanics and Foundation Engineering from Indian Institute of Technology Roorkee in 1963. He was also a faculty member in this Institute. He joined Central PWD in 1963, and worked in different capacities in the Government including hill road project in Nepal, prestigious Parliament Secretariat Building in New Delhi, several building and hill road projects in Arunachal Pradesh, Water Research Center Project at Bagdad (Iraq), projects for Delhi Development Authority etc. He worked at the Government of Delhi where projects to his credit include Delhi College of Engineering, Hospital Projects, Delhi Secretariat Building and a number of flyover projects. The Super animated as Engineer-in- Chief Government of Delhi. He was bestowed with important honorary positions such as Presidents, Indian Buildings Congress, President, and Indian Roads Congress as also Chairman, Quality and Safety Forum, the Institution of Engineers. He was awarded Gold Medal for outstanding services in Arunachal Pradesh, Certificate of Outstanding Achievements by Govt. of Delhi and Award for 'Outstanding Engineer' by the Institution of Engineers. He has published several

technical papers in professional journals and authored books on various aspects of construction. A book titled; "ISO 9000 Practices in Construction" authored by him has been published recently.

H. K. Srivastava

H. K. SRIVASTAVA H K Srivastava did B Tech (Hons) in Civil Engineering in 1969, and Masters in Structures in 1917, both from IIT Kharagpur. He joined faculty at IIT, BHU for one year prior to joining CPWD in 1972. He worked in different capacities for more than 38 years from Assistant Executive Engineer to Additional DG, CPWD. H K Srivastava has worked in different geographical areas as well as across different organizational cultures within the country and abroad. Worked on road project in Arunachal Pradesh, East-West Highway Project Nepal, Delhi PWD, Indo Bangla Border Road Project and Rural Roads for PMGSY. He has carried out design of multi storied building at Delhi, as also bridges in Nepal and West Bengal. He experience of working for Ministry of Finance real estate investments for Income tax purposes, and as also with NBCC on projects in Iraq at Kirkuk, Mosul and Baghdad during mid-eighties. He is a member of various professional bodies. He has a number of technical papers to this credit. As an active member to Humane Resource Development Committee of IRC, he has been closely associated with the development of 'Guidelines on Skill development of Workmen in Road Sector (IRC:128-2019).



Computer Aided Machine Drawing Practice

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Product Description

Computer Aided Machine Drawing Practice

Computer Aided Machine Drawing Practice offers a comprehensive guide into the world of computer-aided design (CAD) with a focus on machine drawing. As technology evolves, the importance of CAD in the fields of mechanical engineering, automotive design and manufacturing is paramount. This book serves as an essential resource for students and professionals in these domains. Starting with the basics of AutoCAD, the book gradually introduces the reader to its intricacies, with practical insights into 2D and 3D modelling.

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.
- 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.
- Short questions, objective questions and long answer exercises are given for practice of students after every chapter.
- This book is not just an academic tool, but a bridge to the professional world of machine drawing design, making it a must-have for anyone stepping into the realm

of computer-aided design

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- Basic Dimensioning and Annotations in AutoCAD
- Hatching, Blocks and Views in AutoCAD
- Viewport and Isomeric Drawing in AutoCAD
- Printing and plotting in AutoCAD
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Author

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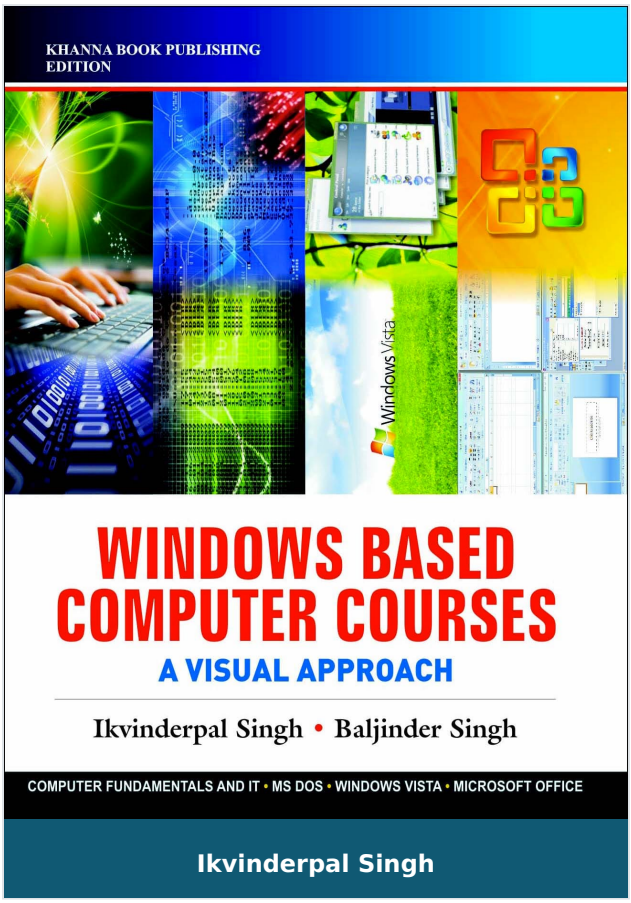

Windows Based Computer Courses

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Product Description

This book is meant for a wide range of readers who with to learn the basic concepts of computer fundamentals, MS DOS, window vista and Microsoft office 2003. In this book we cover all basic concepts of first year computer courses of various Indian Universities in a systematic and simplified manner. While writing this book, it was kept in mind to include only the relevant topics so that it is useful both for learning and reference purpose.

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- MS DOS
- Windows Vista
- Microsoft Office 2003
- Microsoft Word 2003
- Microsoft Excel 2003
- Microsoft PowerPoint 2003
- Microsoft Access 2003

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 courses. His expertise extends to doctoral evaluation, supervision, and active participation on 100+ editorial and review boards worldwide.

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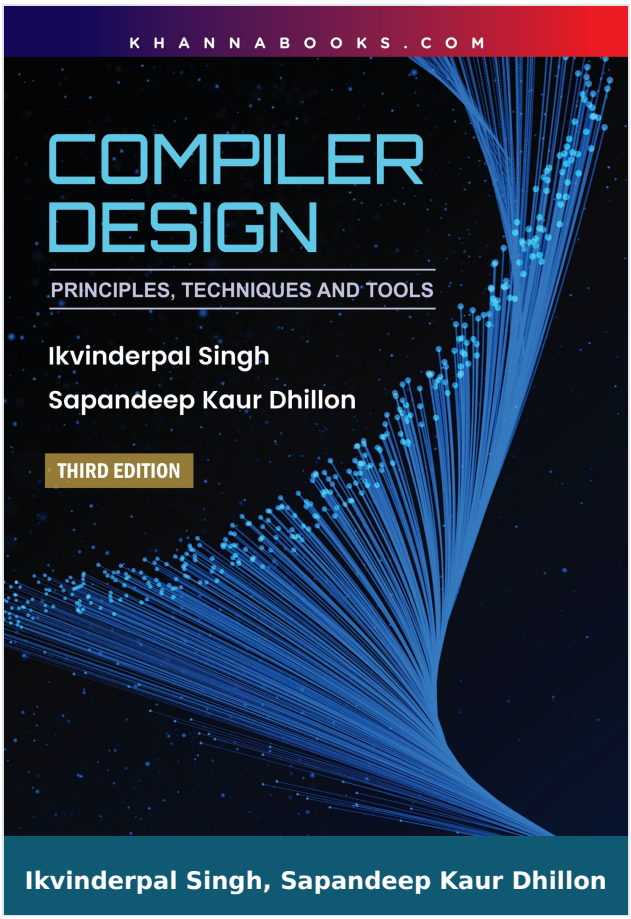

Compiler Design

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Product Description

Compiler design

Compiler design is a subject which many believe to be fundamental and vital to computer science. It is subject which has been studied intensively since the early 1950’s and continues to be an important research field today. It is intended for both students and practitioners, retaining its appeal as a guide to the industry professional and a comprehensive introduction to the student at the upper level undergraduate or first year graduate level. This book will be useful for student of BE (Computer/Electronics), B. Tech, ME(Computer/Electronics), M. Tech, MCA, BCA, M.Sc., B.Sc., and also to students pursuing A/B/C-level course of DOEACC.

Salient Features

- Gives an introduction the basics of compiler design
- Describes the lexical and syntax analysis.
- Deals with symbol table management.
- Describes the storage management.
- Gives the details of code generation and optimization.
- Gives a detailed explanation of various types of compilers.
- Gives a case study of YACC and its implementation.

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- Basics Of Compilers
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- Syntax Analysis
- Symbol Table Handling
- Storage Management
- Intermediate Code Generation
- Code Generation
- Code Optimization
- Types Of Compilers

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 courses. His expertise extends to doctoral evaluation, supervision, and active participation on 100+ editorial and review boards worldwide.

Sapandeep Kaur Dhillon

Sapandeep Kaur Dhillon is an assistant professor in the department of computer science, Guru Nanak Dev University, Amritsar, bringing 12+ years of dedicated academic experience to the discipline. She has authored 4 books, published 10+ research papers

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across national and international journals, reflecting her steady engagement with emerging trends in computing. Her academic interests span data structures, Compiler Design, and Artificial Intelligence, where she integrates foundational theory with practical, algorithmic thinking.

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