

**COMPUTER GRAPHICS AND  
MULTIMEDIA APPLICATIONS**

G. Kavitha | R. Asha | B. Gracelin Sheena

**Computer Graphics And  
Multimedia Applications**

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## Product Description

**Computer Graphics And Multimedia Applications** This comprehensive textbook, Computer Graphics and Multimedia Applications, serves as an essential guide to the theoretical foundations and practical implementations of modern digital visualization and interactive media. Designed to bridge the gap between abstract computer science concepts and tangible real-world applications, the book offers a deep dive into the architecture of graphics systems, from the evolution of display devices—including Cathode Ray Tubes (CRT), Raster Scan, and contemporary Flat Panel Displays like LCD and Plasma—to the mathematical precision required for rendering. The core theme revolves around mastering the generation and manipulation of visual data, covering crucial Output Primitives like line and circle drawing, with a meticulous comparison of efficient rasterization techniques such as the DDA and Bresenham's algorithms. Beyond 2D, the text meticulously explores advanced three-dimensional concepts, including various projection methods, detailed illumination and shading models (Lambertian, Phong), and sophisticated techniques for visible surface detection and texture mapping. Crucially, the book seamlessly integrates these graphics principles with an in-depth exploration of Multimedia Applications, detailing core components, compression standards like JPEG and MPEG, audio/video processing, and animation techniques such as tweening and cel animation. This makes it an invaluable resource for undergraduate and postgraduate students in computer science and engineering, as well as professionals and researchers seeking to build foundational and practical expertise in digital design, interactive systems, and digital media development. **Salient Features**

- **Optimized Drawing Algorithms:** Features a comparative analysis of the DDA and Bresenham's algorithms, emphasizing the use of simple integer arithmetic for high-speed, accurate line and circle rasterization.
- **Display Device Technology:** Explores the mechanics and history of graphical output, covering Cathode Ray Tube (CRT) operation, Refresh CRTs, and modern Flat Panel Displays including Plasma and LCD.
- **Core 3D Visualization:** Provides an in-depth look at three-dimensional concepts such as Parallel and Perspective Projection, equipping the reader with knowledge to transform 3D scenes onto a 2D view plane.
- **Advanced Shading Models:** Detailed sections on rendering realism through illumination, covering techniques like Lambertian and Phong shading, and methods for



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## Table of Contents

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- Basics of Computer Graphics
  - 2D Transformations and Viewing
  - 3D Concepts and Fractal Geometry
  - Visible Surface Detection Methods
  - Introduction to Multimedia
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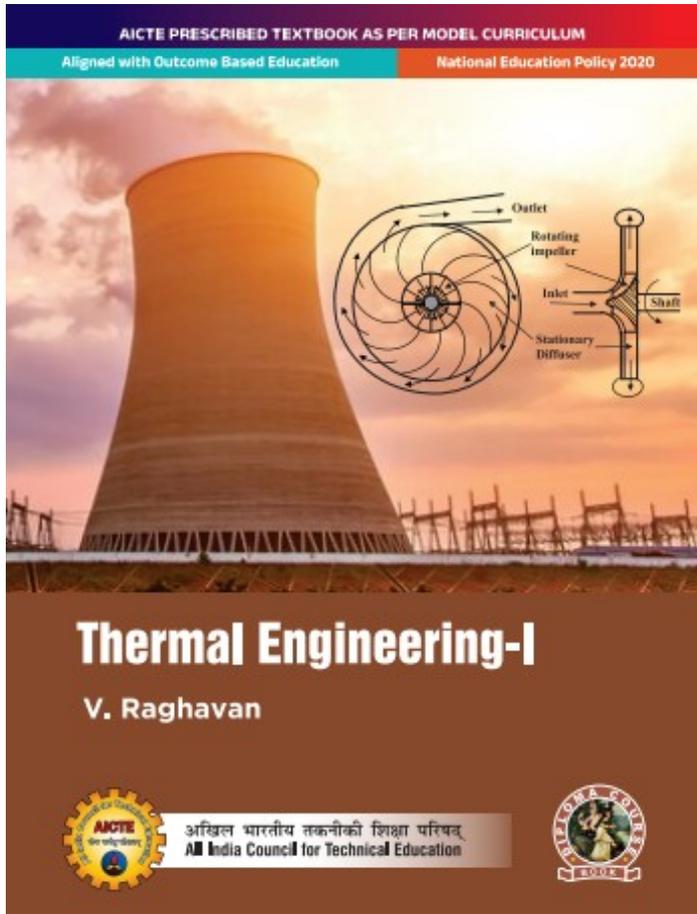
## Author

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## Thermal Engineering- I

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## Product Description

**Thermal Engineering- I** This book introduces various energy sources; fossil and renewable fuels, their properties, followed by other non-conventional sources such as nuclear and fuel cells. It discusses the types of heat engines; diesel engine, petrol engine, their working principle, components and standard thermodynamic cycles. The book provides insights of various system and IC engines such as fuel injection system, ignition system, lubricating system and also briefly covers governing of IC engines. Further this book provides basic insights of the important parameters to evaluate the performance of I.C. engines. Finally, useful discussions on the fundamentals of air compressors and their types, vapour compression refrigeration system, types of refrigerants, types of air conditioning, and seasonal air conditioning. This book also presents the method to conduct experiments for measuring Important properties used in the analysis. 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.
- Solved and unsolved problems including numerical examples are solved with systematic steps.



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- Internal Combustion Engines.
- C. Engine Systems.
- Performance of I.C. Engines.
- Air Compressors, Refrigeration & Air Conditioning

CO and PO Attainment Table Index

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## Author

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**Dr. V. Raghavan**

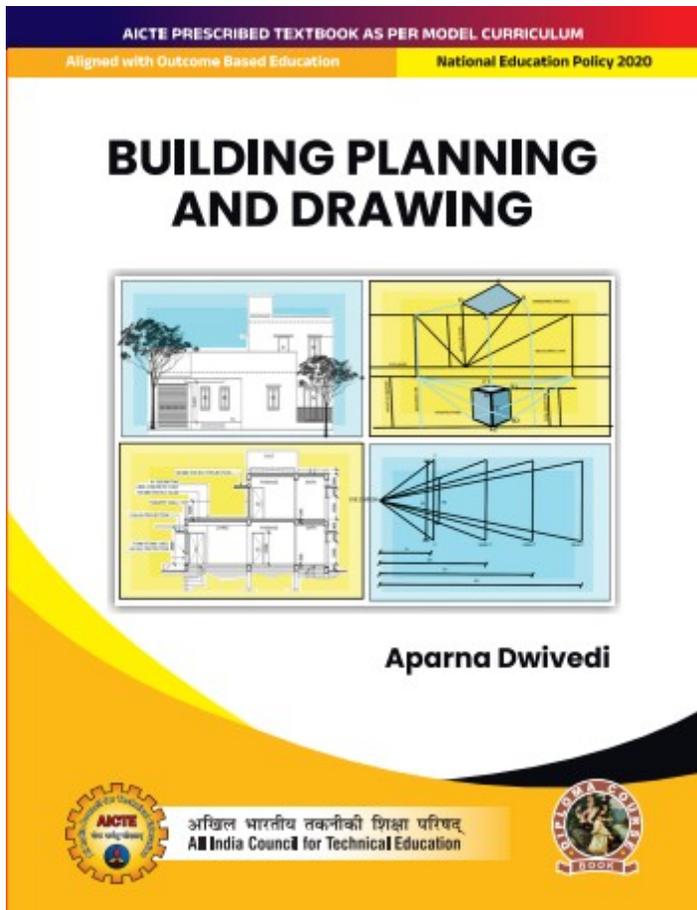
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## Building Planning and Drawing

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## Product Description

Building Planning and Drawing Building Planning and Drawing will be a very useful book for Civil Engineering and Building Industry. The focus of this book is the foundation of building design and understand the building vocabulary along with the process to approve plans and also writing specifications and Estimates. Different types of lines, types of scale, principles of planning for Residential and public building and the book also gives examples of line plans of residential building and public buildings like - school building, primary health Centre, restaurant, bank, post office, hostel, Function Hall and Library. Detailed drawings of load bearing structure and Framed

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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.

Solved and unsolved problems including numerical examples are solved with systematic steps.



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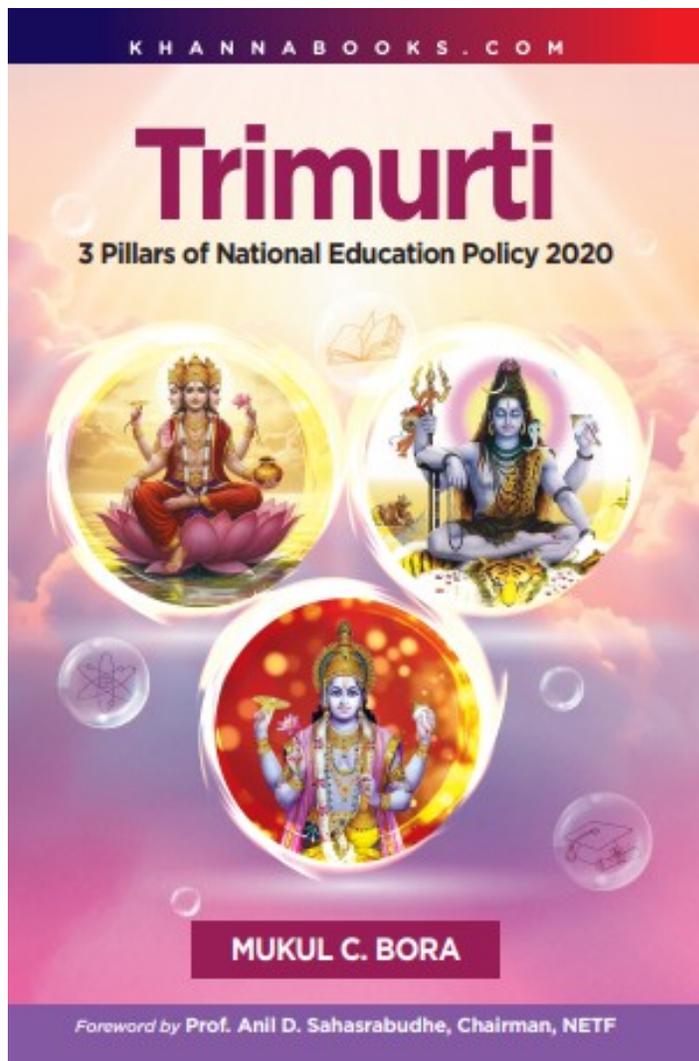
## Author

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**Dr. Aparna Dwivedi** Assistant Professor Sir J.J. College of Architecture Mumbai-400001, Maharashtra

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## Trimurti (3 Pillars of National Education Policy 2020)

<b>Author :</b>	Mukul Chandra Bora
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3 pillar of National education policy 2020 This book beautifully connects the wisdom of the Trimurti-Brahma, Vishnu and Shiva, with the vision of our National education policy (NEP) - 2020. It blends Bharat's ancient knowledge traditions with modern education reforms, inspiring holistic growth, inclusivity and future readiness for learners and educators alike. Salient Features

- Presents NEP 2020 through the lens of India's cultural heritage.
- Explains how Brahma, Vishnu and Shiva are considered symbols of India's education system's creation, preservation, and transformation
- Highlights the Indian Knowledge system's role in modern education.
- Promotes multidisciplinary, values-based and skill-oriented education.
- Bridges tradition and innovation for sustainable progress.
- Written in simple, engaging and relatable language.

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3. Rudra as the third pillars of National Education policy 2020
4. The Role of IKS, Multidisciplinary Research, and 21st Century Skills as per National Education Policy 2020

Conclusion



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**author**

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**Munesh Chandra Trivedi** “Prof. Munesh C. Trivedi has completed his graduation & post graduation in Computer Science and Ph. D. degree in Computer Science. He started his teaching career in engineering education from IEC College of Engineering & Technology, Greater Noida. India. He also served Krishna Institute of Engineering & Technology, Ghaziabad and I.I.T Kanpur as a Project Associate. Presently he is working in Institute of Management Studies, Ghaziabad, India since sept. 2007. He has rich experience in teaching the undergraduate and postgraduate classes. He has published 16 text books and he has been declared Author of Year 2008 as per Books Today survey. He has published more than 25 journal and conference papers in the area of Fractals, image processing, e-learning. He has delivered numerous invited and plenary conference presentations and seminars through Country and chaired the technical sessions in International and national conferences in India. He has delivered many invited talks in India. He is on the review panel of International Journal of Network Security and Computer & Education (Elsevier’s Journal). He has been the member of board of studies of different Indian universities and member of organizing committee for various national and international seminars/workshops. He is member of CSI, IAE, and life member of ISTE.”

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