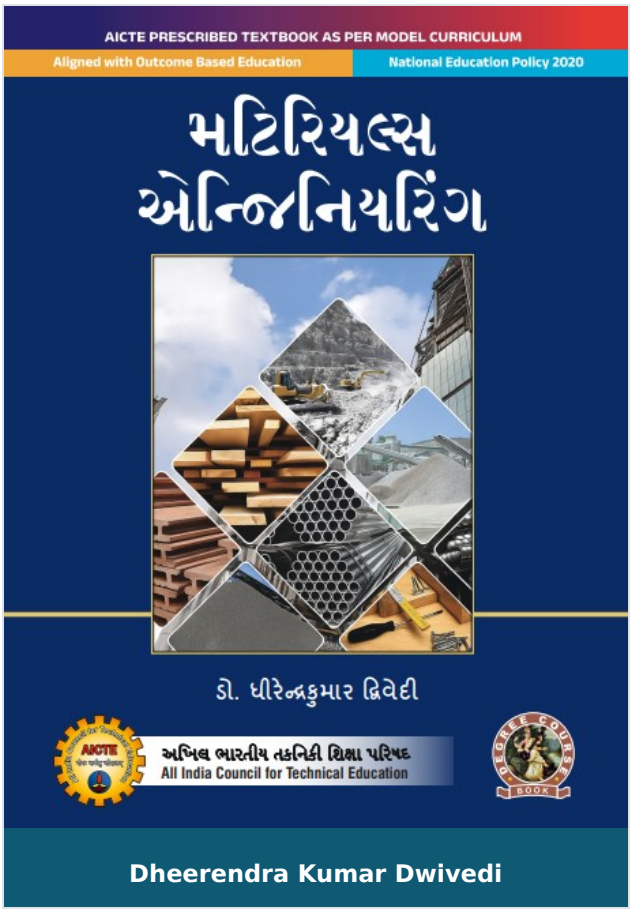

Materials Engineering

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Product Description

Materials Engineering

Materials play very important in development of efficient and reliable products, and systems leading to the improved life of society. Material affects the design and manufacturing of products and systems significantly. Therefore, it is extremely important for mechanical, production, manufacturing and material engineers to have a systematic understanding on fundamental of material science affecting microstructure and mechanical properties coupled techniques and approaches available to modify and improve properties as per need of application. The book entitled “Materials Engineering” developed as per model curriculum of AICTE for 4th semester student of subject Materials Engineering

Salient Features:

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

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

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- Phase Diagram and Metallurgical Transformation
- Hear Treatment of Steel
- Common Engineering Metals: Mechanical Properties and Manufacturing
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- Exercises
- Practical
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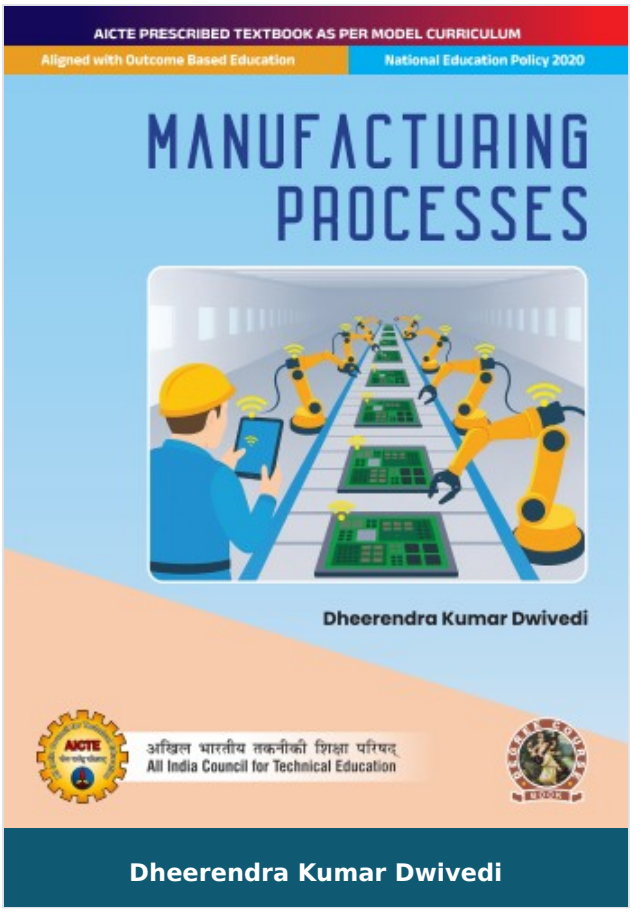

Manufacturing Processes

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Product Description

Manufacturing Processes

This textbook on Manufacturing Processes is designed as per the new syllabus prescribed by the AICTE. The book covers a wide range of topics from geometry and material relationship with manufacturing processes, manufacturing processes to make products of metal, polymer, ceramics and composite material. Fundamentals of conventional, non-conventional and additive manufacturing processes have been presented using detailed schematic diagrams. Additionally mathematical models related to conventional manufacturing processes (casting, forming, machining) have elaborated with supporting solved and unsolved numerical questions. The book provides fundamental understanding on the ways a product of a given material and geometry can be manufactured. This book should satisfy appetite of anyone working or interested to learn manufacturing technologies including students of undergraduate degree program of Mechanical, Manufacturing and Production Engineering in India and abroad.

Salient features:

- The program, course, and unit results are mapped out in the book’s content.
- The book provides comprehensive information on the related topics.
- Subject material has been prepared keeping in mind the teachers and the students. A balance of theory, numerical, and the practical aspects are maintained in a chronological order.
- Equations, tables, and figures are added to make the topics easier to understand.
- After every chapter, revision questions are provided to practice.
- Systematic steps are utilized to solve both solved and unresolved problems, such as numerical examples.

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- The book ends with a list of references that a reader can refer for further advance knowledge on various topics

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- Material shaping processes
- Material removal processes
- Unconventional manufacturing processes
- Additive manufacturing processes
- Joining and fastening processes
- Mathematical Models for Manufacturing processes
- CO and PO Attainment Table
- Index

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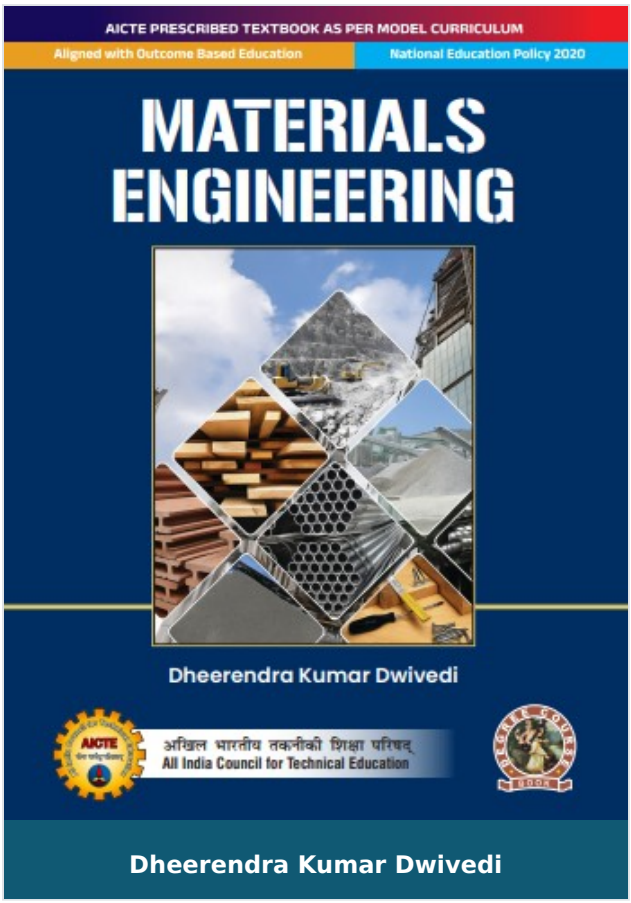

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