



अखिल भारतीय तकनीकी शिक्षा परिषद्
All India Council for Technical Education

ADVANCED MANUFACTURING PROCESSES

Dr. Ranjeet Kumar Sahu
Mr. Devendra Laxman Kamble

III Year Diploma level book as per AICTE model curriculum
(Based upon Outcome Based Education as per National Education Policy 2020).
The book is reviewed by Dr. S. Dhanalakshmi.

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FOREWORD

Engineers are the backbone of any modern society. They are the ones responsible for the marvels as well as the improved quality of life across the world. Engineers have driven humanity towards greater heights in a more evolved and unprecedented manner.

The All India Council for Technical Education (AICTE), have spared no efforts towards the strengthening of the technical education in the country. AICTE is always committed towards promoting quality Technical Education to make India a modern developed nation emphasizing on the overall welfare of mankind.

An array of initiatives has been taken by AICTE in last decade which have been accelerated now by the National Education Policy (NEP) 2020. The implementation of NEP under the visionary leadership of Hon'ble Prime Minister of India envisages the provision for education in regional languages to all, thereby ensuring that every graduate becomes competent enough and is in a position to contribute towards the national growth and development through innovation & entrepreneurship.

One of the spheres where AICTE had been relentlessly working since past couple of years is providing high quality original technical contents at Under Graduate & Diploma level prepared and translated by eminent educators in various Indian languages to its aspirants. For students pursuing 3rd year of their Engineering education, AICTE has identified 48 books, which shall be translated into 12 Indian languages - Hindi, Tamil, Gujarati, Odia, Bengali, Kannada, Urdu, Punjabi, Telugu, Marathi, Assamese & Malayalam. In addition to the English medium, books in different Indian Languages are going to support the students to understand the concepts in their respective mother tongue.

On behalf of AICTE, I express sincere gratitude to all distinguished authors, reviewers and translators from the renowned institutions of high repute for their admirable contribution in a record span of time.

AICTE is confident that these outcomes based original contents shall help aspirants to master the subject with comprehension and greater ease.


(Prof. T. G. Sitharam)



ADVANCED MANUFACTURING PROCESSES

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The course Advanced Manufacturing Processes provides a fundamental knowledge on work and tool holding devices, machines and tools for processing of materials, and of the scientific principles behind modern machining processes. The course is presented in five units. Unit 1 deals with the Jigs and Fixtures; Unit 2 focuses on Jig Boring and Plastic Processing; Unit 3 covers Modern Machining Processes; Unit 4 CNC Milling Machines and machine Tool Automation; and Unit 5 deals with Special Purpose Machines and Maintenance of Machine Tools. All units in the book provide the objectives of the study and expectations from the students in exercising OBE. This book is designed to serve as a valuable resource, offering both theoretical knowledge and practical guidance, so that the reader can realize the course effectively.

Salient Features

- ❑ The content of the book is aligned with the mapping of course outcomes, programs outcomes and unit outcomes
- ❑ Both the student and teacher-centric subject materials are included in the book in a balanced and chronological manner.
- ❑ All figures, tables, and others are inserted to improve the clarity of the topic.
- ❑ Discussion on each unit helps the overall view of the chapter and helps in answering exercise questions.
- ❑ The book provides a lot of information and QR codes for E-resources.
- ❑ Explanations with underlying principles and detailed knowledge on machine tools and processes involved are the basics for the course Advanced Manufacturing Processes and, therefore, presented in a systemic way.

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