Course Type	Course Code	Name of Course	L	T	P	Credit
DC	MMC201	MANUFACTURING TECHNOLOGY	3	0	0	9

Course Objective

The objective of the course is to present the fundamentals and applications of different manufacturing processes.

Learning Outcomes

Upon successful completion of this course, students will:

- have a broad understanding of different manufacturing processes.
- be able to analyze different metal forming operations.
- be able to make basic design of the processes involved in casting.
- be able to make analysis of metal cutting operations.

Unit No.	Topics to be Covered	Lecture Hours	Learning Outcome
1	Introduction of manufacturing processes, importance of manufacturing economics & technological considerations in manufacturing.	3	Basic understanding of different manufacturing processes.
2	Metal Forming: Elastic & plastic deformation, yield criteria, hot working vs. cold working. Applications, operations, equipment and analysis of rolling, forging and extrusion.	7	Understanding and analyzing metal forming with applications in rolling, forging and extrusion.
3	Sheet metal working: Applications, operations, equipment and analysis of important sheet metal working processes.	5	Understanding and analyzing different sheet metal operations.
4	Casting: Basic principle of casting process, types of patterns and allowances, types and properties of moulding sand, gating system, melting practices, solidification of casting, die casting, centrifugal casting, investment casting, casting defects.	10	Understanding and analyzing different steps of casting process.
5	Metal cutting: Introduction, cutting tool, mechanics of chip formation, cutting fluids/lubricants, tool materials, tool wear mechanism and tool life, machinability, machine tools, unconventional machining processes.	13	Understanding and analyzing the fundamentals of metal cutting operations.
6	Welding: Broad classification of welding processes, applications and welding defects.	4	Understanding different welding processes and applications.

Text Books:

1. Materials and Processes in Manufacturing, Degarmo, J. T. Black, Prentice Hall of India Pvt. Ltd.
2. Manufacturing Processes for Engineering Materials, Kalpakjian and Schmid, Prentice Hall.

Reference Books:

1. Fundamentals of modern manufacturing processes, M. P. Groover.
2. Manufacturing Science: Ghosh and Mallick, East-West Press Private Limited.
3. Machining and Metal Working Handbook, Ronal A Walsh and Denis Cormier McGraw Hill Publication.