

ME 222 Manufacturing Technology - I (3-0-0-6)

Introduction to manufacturing processes: Moulding materials and their requirements; Patterns: Types and various pattern materials. Casting processes: Various casting methods, viz., sand casting investment casting, pressure die casting, centrifugal casting, continuous casting, thin roll casting; Mould design; Casting defects and their remedies. Metal joining processes: brazing, soldering, welding; Solid state welding methods; resistance welding; arc welding; submerged arc welding; inert gas welding; Welding defects, inspection. Metal forming Processes: Various metal forming techniques and their analysis, viz., forging, rolling, extrusion, wire drawing, sheet metal working, spinning, swaging, thread rolling; Super plastic deformation; Metal forming defects. Powder metallurgy and its applications.

Texts:

- [1] A Ghosh and A K Mallik, Manufacturing Science, Wiley Eastern, 1986.
- [2] P Rao, Manufacturing Technology: Foundry, Forming And Welding, Tata McGraw Hill, 2008.

References:

- [1] J.S Campbell, Principles Of Manufacturing Materials And Processes, Tata McGraw Hill, 1995.
- [2] F C Flemmings, Solidification Processing, Tata McGraw Hill, 1982.
- [3] P C Pandey and C K Singh, Production Engineering Sciences, Standard Publishers Ltd., 2003.
- [4] S Kalpakjian and S R Schmid, Manufacturing Processes for Engineering Materials, Pearson education, 2009.