

AMR-12 MANUFACTURING PROCESSES: SELECTION AND DESIGN

1. Overview of manufacturing systems,
2. Role of traditional & near-net shape processes in manufacturing industry,
3. Basic attributes of manufactured products -size & shape complexity,
4. Machining requirement & machining losses, dimensional tolerance & surface condition,
5. Mechanical properties & manufacture costs expendable mold & permanent mold shape casting processes,
6. Open die & closed die forging processes & design consideration,
7. Manufacturing process for making products such as sheets, round/sectioned bars,
8. Seamless tube /rings & wires,
9. Criteria for selection of metal & ceramic powder production processes for a given application,
10. Powder processing equipment & their selection.
11. Joining processes, selection & design,
12. Case studies with CAD/CAM aspect.

Reference Books:

1. Fundamentals of Manufacturing Processes, Lal & Choudhary (Narosa)