

AMAE06 PRODUCTION TECHNOLOGY

UNIT-1 CASTING

- 1.1 Casting types, procedure to make sand mould, types of core making,
- 1.2 Moulding tolls, machine moulding, special moulding processes-co2 moulding;
- 1.3 Shell moulding, investment moulding, permanent mould casting,
- 1.4 Pressure die casting, centrifugal casting, continuous casting, casting defects.

UNIT-2 WELDING

- 2.1 Classification of welding processes.
- 2.2 Principles of Oxyacetylene gas welding.
- 2.3 A.C. metal arc welding, resistance welding, submerged arc welding,
- 2.4 Tungsten inert gas welding,
- 2.5 metal inert gas welding, plasma arc welding, thermic welding, electron beam welding,
- 2.6 Laser beam welding, defects in welding, soldering and brazing.

UNIT-3 MACHINING

- 3.1 General principles (with schematic diagrams only) of working and commonly performed operations in the following machines:
- 3.2 Lathe, Shaper, Planer, Horizontal milling machine,
- 3.3 Universal drilling machine, Cylindrical grinding machine, Capstan and Turret lathe.
- 3.4 Basics of CNC machines. General principles and applications of the following processes:
- 3.5 Abrasive jet machining, Ultrasonic machining, Electric discharge machining,
- 3.6 Electro chemical machining, Plasma are machining,
- 3.7 Electron beam machining and Laser beam machining.

UNIT-4 FORMING AND SHAPING OF PLASTICS

- 4.1 Types of plastics-characteristics of the forming and shaping processes
- 4.2 Moulding of Thermoplastics-working principles and typical applications of Injection moulding-Plunger and screw machines-Blow moulding
- 4.3 Rotational moulding-Film moulding-Extrusion-typical Industrial applications-
- 4.4 Thermoforming-processing of thermosets-working principles and typical applications-
- 4.5 Compression moulding-Transfer moulding
- 4.6 Bonding of thermoplastics Fusion and solvent methods-Induction and Ultrasonic methods.

UNIT-5 METAL FORMING AND POWDER METALLURGY

- 5.1 Principles and applications of the following processes:
- 5.2 Forging, Rolling, Extrusion, Wire drawing and Spinning, Powder metallurgy
- 5.3 Principal steps involved advantages. Disadvantages and limitations of powder metallurgy.

References Books:

1. R. K. Jain and S. C. Gupta, production Technology, Khanna Publishers. 16th Edition, 2001.
2. H. M. T. production technology-Hand book, Tata Mc Graw-Hill, 2000.