

SYLLABUS :-

Course Contents

Theory Component: Basic concepts and principles of manufacturing

Performing Processes: Casting, forging, rolling, drawing, extrusion, press tool work, plastic moulding and powder metallurgy.

Joining Processes: Welding, brazing and crimping Semi-finishing and finishing processes: Machining (Turning, shaping, drilling, Milling and grinding).

Non-traditional Processes: Abrasive jet machining, Ultrasonic machining, Electro-discharge machining, Electrochemical machining and laser beam machining.

Product Quality: Possible defects and their detection, assessment and remedy.

Laboratory Component: Suggested Assignments

Machining:

- 1.Introducing to various machine tools and demonstration on machining
- 2.Making a steel pin as per drawing by machining in centre lathe
- 3.External screw thread by single point chasing in lathe
- 4.Making a cast iron Vee block by shaping
- 5.Making a regular polygon prism (MS) by milling
- 6.Making a gauge as per drawing
- 7.Study of machining in machining in machining centre (CNC) and Electro discharge machining (EDM)

Foundry Practice:

- 8.Orientation, demonstration and practice on metal casting
- 9.Practicing sand moulding using split and uneven parting line pattern
- 10.Practice on CO2 moulding and machine moulding
- 11.Mechanised sand preparation and melting practice

Welding Practice:

- 12Practice on Oxy-acetylene gas welding and manual metal arc welding (running bead)
- 13.Practice on oxy-acetylene gas cutting and arc welding for butt welding
- 14.Introduction and demonstration on submerged arc welding and plasma spray coating

Metal Forming:

- 15.Demonstration of deep drawing process