

3rd SEMESTER MECHANICAL 2026

SUBJECT- MANUFACTURING PROCESSES

TOTAL PERIODS-45

Course Code: MEPC201

TH.1 -3P/WEEK

Sl No.	week	Day	Topics to be covered
1	1 st	1 st day	Introduction:Types of cutting fluids, Fluids and coolants required in turning, drilling, shaping, sawing & broaching
		2 nd day	Selection of cutting fluids, methods of application of cutting fluid
		3 rd day	Classification of lubricants (solid, liquid, gaseous)
Sl No.	week	Day	Topics to be covered
2	2 nd	1 st day	Properties and Applications of lubricants.
		2 nd day	Lathe Operations:Types of lathes – light duty, medium duty and heavy duty geared lathe
		3 rd day	CNC lathe; Specifications; Basic parts and their functions
Sl No.	week	Day	Topics to be covered
3	3 rd	1 st day	Turning, parting off, Knurling, facing, Boring, drilling
		2 nd day	Threading, step turning, taper turning
		3 rd day	Nomenclature of single point cutting tool of lathe
Sl No.	week	Day	Topics to be covered
4	4 th	1 st day	Broaching Machines: Introduction to broaching; Types of broaching machines
		2 nd day	Elements of broach tool, broach teeth details
		3 rd day	Nomenclature; Tool materials Nomenclature
Sl No.	week	Day	Topics to be covered
5	5 th	1 st day	Drilling: Classification; Basic parts and their functions
		2 nd day	Radial drilling machine
		3 rd day	Types of operations; Specifications of drilling machine
Sl No.	week	Day	Topics to be covered
6	6 th	1 st day	Types of drills and reamers
		2 nd day	Welding: Classification; Gas welding techniques
		3 rd day	Types of welding flames: Arc Welding – Principle, Equipment
Sl No.	week	Day	Topics to be covered
7	7 th	1 st day	Applications, Shielded metal arc welding; Submerged arc welding
		2 nd day	TIG / MIG welding; Resistance welding - Spot welding
		3 rd day	Seam welding, Projection welding; Welding defects
Sl No.	week	Day	Topics to be covered
8	8 th	1 st day	Brazing and soldering: Types

		2 nd day	Principles & Applications
		3 rd day	Milling:Introduction:Types of milling machines, Plain, Universal, vertical; constructional details – specifications
Sl No.	week	Day	Topics to be covered
9	9 th	1 st day	Milling operations: simple, compound and differential indexing
		2 nd day	Milling cutters – Types; Nomenclature of teeth; Teeth materials; Tool signature of milling cutter, Tool & work holding devices
		3 rd day	Gear Making: Manufacture of gears – by Casting, Moulding, Stamping, Coining Extruding
Sl No.	week	Day	Topics to be covered
10	10 th	1 st day	Rolling, Machining; Gear generating methods: Gear Shaping with pinion cutter & rack cutter
		2 nd day	Gear hobbing; Description of gear hob; Operation of gear hobbing machine
		3 rd day	Gear finishing processes; Gear materials and specification; Heat treatment processes applied to gears
Sl No.	week	Day	Topics to be covered
11	11 th	1 st day	Press working: Types of presses and Specifications, Press working operations
		2 nd day	Cutting, bending, Drawing, punching, blanking, notching, Lancing
		3 rd day	Die set components- Punch and die Guide pin, bolster plate, stripper, stock guide, feed stock
Sl No.	week	Day	Topics to be covered
12	12 th	1 st day	Pilot, Punch and die clearances for blanking and piercing, effect of clearance
		2 nd day	Grinding and finishing processes: Principles of metal removal by Grinding
		3 rd day	Abrasives – Natural & Artificial; Bonds and binding processes: Vittrified, silicate, shellac, rubber, Bakelite
Sl No.	week	Day	Topics to be covered
13	13 th	1 st day	Factors affecting the selection of grind wheels: size and shape of wheel, kind of abrasive
		2 nd day	Grain size, grade and strength of bond, structure of grain, spacing, kinds of bind material
		3 rd day	Standard marking systems: Meaning of letters & numbers sequence of marking, Grades of letters
Sl No.	week	Day	Topics to be covered
14	14 th	1 st day	Grinding machines classification-:Cylindrical, Surface, Tool & Cutter grinding machines; Construction details
		2 nd day	Principle of centerless grinding, Advantages & limitations of centerless grinding;
		3 rd day	Finishing by grinding:Honing, Lapping, Super finishing; Electroplating: Basic principles, Plating metals, Applications

Sl No.	week	Day	Topics to be covered
15	15 th	1 st day	Hot dipping: Galvanizing, Tin coating, Parkerizing, Anodizing
		2 nd day	Metal spraying: Wire process Oil base Paint, Lacquer base, Enamels, Bituminous paints
		3 rd day	Rubber base coating; Finishing specifications