

Lesson Plan

Name of Faculty : Kamal Kumar, Assistant Professor
Discipline : (ECE+ME+EE+FT)
Semester : 1st
Subject : ESC/4-T, Workshop/Manufacturing Practices
Lesson Plan Duration: 15 weeks
Work Load (Lecture/Practical) per week (in hours): Lectures 03 hours (from September2024 to December2024)

Week	Lecture Day	Topic (Including Assignment/Test)	% Syllabus Covered	Remarks	
Unit-I Introduction and Engineering Materials, Plant Layout					
1 st	1	Introduction to Manufacturing Processes and their Classification			
	2	Industrial Safety: Introduction, Types of Accidents			
	3	Causes and Common Sources of Accidents, Methods of Safety			
2 nd	4	First Aid. General Properties and Applications of Engineering Materials			
	5	Cast Iron, Mild Steel			
	6	Medium Carbon Steel, High Carbon Steel			
3 rd	7	High-Speed Steel			
	8	Plant Layout, Objectives of Layout			
	9	Types of Plant Layout and their Advantage			
UNIT-II Manufacturing Methods Forming processes, Fitting Operations, Power Tools and Principle of Machining					
4 th	10	Sheet metal processes, Powder metallurgy			
	11	Punching, blanking, piercing, forging			
	12	Hot rolling and cold rolling, extrusion			
5 th	13	Lathe, Parts of a lathe machine and operations of Lathe machine			
	14	Shaper machine			
	15	Drilling machine			
6 th	16	Milling machine			
	17	Clamping tools, Gauges and cutting tools			
	18	Introduction to power tools			
7 th		Minor Test- I			
UNIT-III Metal Casting and Welding, Introduction to Carpentry, Fitting, Plastic Moulding					
8 th	19	Introduction to moulding and casting			
	20	Pattern and its types, Pattern allowances			
	21	runner, riser, gates, function of core, moulding sand and its constituents			
9 th	22	Cupola furnace			
	23	casting defects			
	24	Gas welding,, types of flames, Brazing, soldering			
10 th	25	Resistance welding and its principle; Spot, Seam, Butt, Projection welding			
	26	Arc welding and its principle; Metal, Carbon, Submerged			
	27	MIG, TIG arc welding, function of flux			
11 th	28	Types of wood, seasoning of wood and defects in wood			
	29	Introduction to Electrical and Electronics			
	30	Introduction and classification of Plastic moulding: Injection moulding and Blow moulding, Glass cutting.			
UNIT-IV Joining and Modern Machining Processes, CNC machining and Additive Manufacturing					
12 th	31	Introduction to welding, soldering, brazing,			
	32	sintering, adhesive bonding, riveting			
	33	Wire-cut Electric Discharge Machining (WEDM)			
13 th	34	Ultrasonic Machining (USM)			
	35	Laser Beam Machining (LBM).			
	36	Introduction to CNC machining			
14 th		Minor Test- II			
15 th	37	Advantages , Disadvantages and Applications of CNC machining			
	38	Additive manufacturing			
	39	Types and applications			