

Lesson Plan

Name of Faculty : Jagjeet Singh, Assistant Professor
Discipline : ME+ECE+EE
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

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		

Week	Lecture Day	Topic (Including Assignment/Test)	% Syllabus Covered	Remarks
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		