

LESSON PLAN

NAME OF FACULTY : Harpal Singh Kalra
DISCIPLINE : ALL
SEMESTER : 2ND
SUBJECT : Manufacturing Technology and Processes
LESSON PLAN DURAT : 15 WEEKS (FROM JANUARY , 2018 TO APRIL, 2018)
WORK LOAD (LECTURE/PRACTICAL)PER WEEK (IN HOURS) : 4 LECTURE, 3 PRACTICAL

WEEK	THEORY		Practical	
	Lecture Day	Topic (Including Assignment/Test)	Practical Day	Topic
1st	I	Introduction to Manufacturing Technology and Processes and their use in practical life	1st	To study different types of measuring tools used in metrology and determine least counts of vernier calipers, micrometers and vernier height gauges
	II	Overview to entire syllabus		
	III	Introduction: Introduction to Manufacturing Processes and their Classification.		
	IV	Industrial Safety; Introduction, Types of Accidents, Causes and Common Sources of Accidents		
2nd	I	Methods of Safety, First Aid.	2nd	To study different types of machine tools (lathe, shape, milling, drilling machines)
	II			
	III	Engineering Materials: General Properties and Applications of Engineering		
	IV	Medium Carbon Steel, High Carbon Steel		
3rd	I	High Speed Steel and Cast Iron.	3rd	To prepare a job on a lathe involving facing, outside turning, taper turning, step turning, radius making and parting-off.
	II			
	III	Unit-I Test		
	IV	Foundry: Introduction to Casting Processes, Basic Steps in Casting Process		
4th	I	Pattern, Types of Patterns, Pattern Allowances, Risers, Runners, Gates	4th	To prepare a job on a lathe involving facing, outside turning, taper turning, step turning, radius making and parting-off.
	II	Moulding Sand and its composition, Sand Preparation, Molding Methods		
	III	Core Sands and Core Making, Core Assembly, Mold Assembly		
	IV	Melting (Cupola) and Pouring, Fettling		
5th	I	Casting Defects and Remedies.	5th	VIVA VOCE
	II	Unit-II Test		
	III	Cold Working (Sheet Metal Work): Sheet Metal Operations, Measuring		
	IV			
6th	I	Layout Marking, Shearing, Punching, Blanking	6th	To study different types of fitting tools and marking tools used in fitting practice.
	II			
	III	Piercing, Forming, Bending and Joining		
	IV			
7th	I	Advantages and Limitations.	7th	To prepare lay out on a metal sheet by making and prepare rectangular tray, pipe shaped components e.g. funnel.
	II	feedback Sequential Circuit design		
	III			
	IV			
8th	I	Unit-III (COLD WORKING) Test	8th	To prepare joints for welding suitable for butt welding and lap welding.
	II	Hot Working Processes: Introduction to Hot Working, Principles of Hot Working Processes		
	III	Forging, Rolling, Extrusion, Wire Drawing.		
	IV			
9th	I	Plant Layout: Objectives of Layout, Types of Plant Layout and their Advantages.	9th	To perform pipe welding.
	II			
	III			
	IV			
10th	I	Unit-III (HOT WORKING AND PLANT LAYOUT) Test	10th	VIVA VOCE
	II	Introduction to Machine Tools: Specifications and Uses of commonly used Machine Tools in a Workshop		
	III	Lathe Machine		
	IV	Milling Machine		
11th	I	Drilling Machine	11th	To study various types of carpentry tools and prepare simple types of at least two wooden joints.
	II	Unit-IV (MACHINE TOOL) Test		
	III	Introduction to Metal Cutting.		
	IV	Nomenclature 6 of a Single Points Cutting Tool and Tool Wear.		
12th	I	Mechanics of Chips Formations, Type of Chips	12th	To prepare mold and core assembly, to put metal in the mold and fettle the casting.
	II			
	III	Use of Coolants in machining.		
	IV	Unit-IV (Nomenclature and Chips) Test		
13th	I	Welding: Introduction to Welding, Classification of Welding Processes	13th	To prepare horizontal surface/ vertical surface/ curved surface/ slots or V-grooves on a shaper/ planner.
	II	Gas Welding: OxyAcetylene Welding		
	III	Resistance Welding: Spot and Seam Welding		
	IV	Arc Welding: Metal Arc		
14th	I	TIG & MIG Welding	14th	To prepare a job involving side and face milling on a milling machine
	II	Welding Defects and Remedies		
	III	Soldering & Brazing.		
	IV	Unit-IV (Welding) Test		
15th	I	Practice/Revision Session	15th	VIVA VOCE
	II			
	III			
	IV			