Lesson Plan

Name of the Faculty: Mr. Nitish Munjal (Theory & Practical)

Discipline: Department of Applied Sciences and Humanities

Semester: 1st

Subject: Manufacturing Technology & Processes (ME-101N), Engineering Workshop (ME-107N)

Work Load (Lecture/Practical) per week (in hours): Lectures-04, Practicals-03

Week	Theory		Practical	
	Lecture day	Topic (including assignment/test)	Practical day	Topic
1st	1st	Introduction of Subject	1st	Workplace Layout, Safety Rules, Introduction to all shops.
	2nd	Introduction to Manufacturing Processes		
	3rd	Classification of Manufacturing Processes		
	4th	Industrial Safety, Types of Accidents		
2nd	5th	Causes and Common Sources of Accidents	2nd	To study different types of measuring tools used in metrology and determine least counts of vernier calipers, micrometers and vernier height gauges.
	6th	Methods of Safety, First Aid.		
	7th	REVISION		
	8th	TEST		
3rd	9th	General Properties and Applications of Engineering Materials	3rd	To study different types of machine tools (lathe, shape, milling, drilling machines)
	10th	Mild Steel, Medium Carbon Steel, High Carbon Steel		
	11th	High Speed Steel and Cast Iron		
	12th	REVISION		
4th	13th	TEST	4th	To prepare a job on a lathe involving facing, outside turning, taper turning, step turning, radius making and parting-off.
	14th	Introduction to Casting Processes		
	15th	Basic Steps in Casting Process		
	16th	Pattern, Types of Patterns		
5th	17th	Pattern Allowances, Risers, Runners, Gates	5th	To study different types of fitting tools and marking tools used in fitting practice.
	18th	Moulding Sand and its composition		
	19th	Sand Preparation, Molding Methods		
	20th	REVISION		
6th	21st	TEST	6th	To prepare lay out on a metal sheet by making and prepare rectangular tray, pipe shaped components
	22nd	Core Sands and Core Making		
	23rd	Assembly, Mold Assembly, Melting and Pouring, Fettling		
	24th	Cupola Furnance.		
7th	25th	Casting Defects and Remedies	7th	To prepare joints for welding suitable for butt welding and lap
	26th	REVISION		

	27th	TEST		welding.
	28th	Introduction to Recrystallization & Difference between Hot & Cold Working		
8th	**29th**	Sheet Metal Operations, Measuring, Layout Marking, Shearing, Punching, Blanking, Piercing, Forming, Bending and Joining, Advantages and Limitations	**8th**	To study various types of carpentry tools and prepare simple types of at least two wooden joints.
	30th	Introduction to Hot Working, Principles of Hot Working Processes, Forging		
	31st	Rolling		
	32nd	Extrusion, Wire Drawing		
9th	**33rd**	REVISION	**9th**	To prepare mold and core assembly, to put metal in the mold and fettle the casting.
	34th	TEST		
	35th	Plant Layout: Objectives of Layout		
	36th	Types of Plant Layout and their Advantages		
10th	**37th**	REVISION	**10th**	To study Cupola Furnace in Detail.
	38th	TEST		
	39th	Introduction to Machine Tools: Specifications and Uses of commonly used Machine Tools in a Workshop such as Lathe		
	40th	Specifications and Uses of commonly used Machine Tools in a Workshop Milling, Drilling		
11th	**41st**	Introduction to Metal Cutting. Nomenclature of a Single Points Cutting Tool	**11th**	To Explain different types of welding which is common in use.
	42nd	Tool Wear. Mechanics of Chips Formations		
	43rd	Type of Chips , Use of Coolants in machining.		
	44th	REVISION		
12th	**45th**	TEST	**12th**	REVISION
	46th	Introduction to Welding, Classification of Welding Processes		
	47th	Gas Welding: Oxy-Acetylene Welding		
	48th	Resistance Welding; Spot and Seam Welding		
13th	**49th**	Arc Welding: Metal Arc, TIG & MIG Welding	**13th**	REVISION
	50th	Welding Defects and Remedies		
	51st	Soldering & Brazing		
	52nd	REVISION		
14th	**53rd**	TEST	**14th**	REVISION
	54th	P1		

	55th	P2		
	56th	P3		
15th	**57th**	P4	**15th**	REVISION
	58th	P5		
	59th	P6		
	60th	P7		

Assignments:-

A1: Manufacturing Processes & its classifications.

A2: Basic Process of Casting, Types of Pattern.

A3: Cupola Furnance.

A4: Casting defects and its remedies.

A5: Hot Working Processes.

A6: Plant Layout and its classification.

A7: Welding & its types:- Gas Welding, Arc welding, Resistance welding.

Presentations:-

P1: Manufacturing Processes & its classifications.

P2: Basic Process of Casting, Types of Pattern.

P3: Cupola Furnance.

P4: Casting defects and its remedies.

P5: Cold & Hot working operations.

P6: Plant Layout and its classification, Tool Nomenclature.

P7: Welding & its types:- Gas Welding, Arc welding, Resistance welding.