

LESSON PLAN

Semester:4th		Year: 2024-2025	Course: B.Tech
Branch : Mechanical engineering		Sub: Basic Manufacturing Process	Total Credit:03
		Sub Code : MEPC2006	
Name of the Faculty:		Swapna Kumari Meher	
Designation :		Assistant Professor	
Department :		Mechanical Engineering	
Session		2024-25	
Recommended Books		Text book:	
		1Manufacturing technology by P.N.Rao, Tata McGraw Hill publication.	
		2Welding Technology by R.A. Little, TMH	
		Reference Books:	
		1Manufacturing Engineering & Technology by Kalpak Jain, Addition Wesley Edition	
		2Principles of Metal Casting by Hein and Rosenthol, Tata Mc-Graw Hill India.	
Sl. No.	Lecture No.	Topics to be covered	No. of Classes
MODULE-1			
1	Lecture-01	Manufacturing concepts: Primary and secondary manufacturing processes,	8
2	Lecture-02	Principle of metal casting: Terminology, Types of patterns, pattern materials and	
3	Lecture-03	pattern allowances. Principle of metal casting:Terminology, Types of patterns,	
4	Lecture-04	pattern materials and pattern allowances. Moulding Materials, sand casting, continuous casting,	
5	Lecture-05	pattern materials and pattern allowances. Moulding Materials, sand casting, continuous casting,	
6	Lecture-06	sand,binders, additives. Properties of moulding sand and sand testing. Casting defects. Melting	
7	Lecture-07	furnaces - cupola, resistance furnace, induction and arc furnace, Solidification of castings,	
8	Lecture-08	design of sprue, gating system, runner, and riser	
MODULE-2			
9	Lecture-09	Weldability; Classification of welding processes,	
10	Lecture-10	Introduction to gas welding,	
11	Lecture-11	Oxyacetylene welding, Flame cutting.	
12	Lecture-12	Principles and processes of arc welding	
13	Lecture-13	(SMAW, GTAW, GMAW, FCAW, PAW, SAW).	10
14	Lecture-14	Brazing and soldering;	
15	Lecture-15	Principle of resistance welding.	
16	Lecture-16	Principle of friction welding,	
17	Lecture-17	Solid state welding;	
18	Lecture-18	Weld inspection and testing.	

MODULE-3			
19	Lecture-19	Formability of metals;	9
20	Lecture-20	Cold and hot working; Rolling: types of rolling mills	
21	Lecture-21	Rolling defects. Forging;	
22	Lecture-22	Smith Forging, Drop and Press forging,	
23	Lecture-23	M/c forging, Forging defects.	
24	Lecture-24	Extrusions: Direct, Indirect,	
25	Lecture-25	Impact and Hydrostatic extrusion	
26	Lecture-26	Hydrostatic extrusion and their applications	
27	Lecture-27	Weld inspection and testing.	
MODULE-4			
28	Lecture-28	Brief introduction to sheet metal working:	8
29	Lecture-29	Bending, Forming, Deep drawing,	
30	Lecture-30	Wire drawing shearing,	
31	Lecture-31	Stretch forming	
32	Lecture-32	Metal spinning	
33	Lecture-33	Embossing and Coining	
34	Lecture-34	Brief introduction to explosive forming	
35	Lecture-35	coating and deposition methods.	

Signature of Faculty Member

Signature of HOD

PRINCIPAL