

MANUFACTURING PROCESS LAB

Course code	20ME3452	Year	II	Semester	II
Course category	Professional Core	Branch	ME	Course Type	Lab
Credits	1.5	L-T-P	0-0-3	Prerequisites	-
Continuous Internal Evaluation	15	Semester End Evaluation	35	Total Marks	50

Course outcomes: At the end of the course, the student will be able to

CO's	Statement	Skill	BTL	Experiments
CO1	Demonstrate various processes used for casting, joining, sheetmetal and plastic processing.	Apply	L3	E ₁ To E ₁₄
CO2	Fabricate weldments using arc, gas, resistance and TIG welding.	Analyze	L4	E ₁ To E ₅
CO3	Analyze the properties of moulding sands, prepare pattern and mould cavity using sand casting.	Estimate	L4	E ₆ To E ₉
CO4	Experiment formability studies on sheet metal	Evaluate	L4	E ₁₀ , E ₁₁
CO5	Analyse different moulding methods of manufacturing plastics components.	Evaluate	L4	E ₁₁ To E ₁₄

**Course outcomes towards achievement of programme outcomes & Strength of correlations
(High :3, Medium :2, Low :1)**

	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12	PSO1	PSO2
CO1	3	2		2					3	3		2	3	3
CO2	3	2	2	2					3	3		2	3	3
CO3	3	2	2	2					3	3		2	3	3
CO4	3	2	2	2					3	3		2	3	3
CO5	3	2	2	2					3	3		2	3	3

Contents	Mapped CO
1. Fabricate the butt joint on the given work pieces using metal arc welding. 2. Fabricate the Lap joint on the given work pieces using metal arc welding. 3. Fabricate butt joint on the given work pieces using gas welding. 4. Fabricate butt joint on the given work pieces using TIG welding. 5. Join metal plates on the given work pieces using resistance spot welding.	CO1, CO2
6. Determine the grain fineness number of the given moulding sand. 7. Preparation of Pattern for sand casting of at least two products (i) Single Piece (ii) Split Piece 8. Preparation of mould cavity on sand casting using single and split piece pattern.	CO1, CO3
9. Perform formability studies on sheet metals. (i) Blanking and Piercing (ii) Bending	CO1, CO4
10. Develop plastic components using (i) Injection Moulding (Any Two Products)(ii) Blow Moulding.	CO1, CO5