



MARRI LAXMAN REDDY INSTITUTE OF TECHNOLOGY AND MANAGEMENT

(AN AUTONOMOUS INSTITUTION)

(Approved by AICTE, New Delhi & Affiliated to JNTUH, Hyderabad)

Accredited by NAAC with 'A' Grade & Recognized Under Section 2(f) & 12(B) of the UGC act, 1956

COURSE CONTENT

PRODUCTION TECHNOLOGY LAB								
III Semester: ME								
Course Code	Category	Hours / Week			Credit	Maximum Marks		
2530375	Foundation	L	T	P	C	CIA	SEE	Total
		0	0	2	1	40	60	100
Contact Classes: Nil	Tutorial Classes: Nil	Practical Classes: 45			Total Classes: 45			
Prerequisites: Engineering Workshop								

Course Overview:

The Production Technology Lab provides practical exposure to basic manufacturing processes such as casting, welding, forming, machining, and plastic processing. It helps students understand the working principles of production tools, machines, and equipment through hands-on experiments. The lab bridges the gap between theory and practice while emphasizing safety, process understanding, and product quality.

Course Objectives:

1. To provide hands-on experience with casting, welding, forming, and machining operations.
2. To help students understand the working principles of manufacturing processes.
3. To expose students to tools, machines, and equipment used in production workshops.
4. To develop safety awareness and quality control in manufacturing practices.
5. To bridge theoretical knowledge with practical application of manufacturing methods.

Course Outcomes: After Completion of the Course, Students should be able to

1. Demonstrate casting practices such as pattern making and sand molding.
2. Perform welding operations like arc welding, gas welding, and spot welding.
3. Operate basic machining tools such as lathe, drilling, and milling machines.
4. Understand sheet metal fabrication, bending, and joining processes.

List of Experiments:

- I. Metal Casting:
 1. Pattern Design and making - 1 Exercise (one casting drawing).
 2. Sand properties testing - 1 Exercise (strengths, and permeability)
 3. Moulding Melting and Casting -1 Exercise
- II. Welding:
 1. ARC Welding Lap and Butt Joint - 2 Exercises
 2. Spot Welding - 1 Exercise
 3. TIG Welding - 1 Exercise
 4. Plasma welding and Brazing - 2 Exercises (Water Plasma Device)

III. Mechanical Press Working:

1. Blanking and Piercing operation and study of simple, compound and progressive press tool.

2. Hydraulic Press: Deep drawing and extrusion operation.

3. Bending and other operations

IV. Processing of Plastics:

1. Injection Moulding

2. Blow Moulding

TEXTBOOKS:

1. Dictionary of Mechanical Engineering, G.H.F. Naylor, Jaico Publishing House, 1st Edition, 1999.

REFERENCE BOOKS:

1. Manufacturing Engineering and Technology, Serope Kalpakjian and Steven R. Schmidt, Pearson, 7th Edition, 2014.
2. Elements of Workshop Technology Vol.1, S.K. Hajra Choudhury, A.K. Hajra Choudhury and Nirjhar Roy, Media Publishers and Promoters Pvt. Ltd., 1st Edition, 2008.

ELECTRONIC RESOURCES:

1. <https://www.vlab.co.in>
2. <http://www.vlab.amrita.edu>
3. <https://mp-dei.vlabs.ac.in/>
4. <https://3dp-dei.vlabs.ac.in/List%20of%20experiments.html>
5. <http://gssl.iitk.ac.in/pssl/>
6. <http://sm-nitk.vlabs.ac.in/>
7. <http://msvs-dei.vlabs.ac.in/>

MATERIALS ONLINE:

1. Lab Manual