



# Techno College of Engineering Agartala

An Engineering College Approved by AICTE, MHRD, Govt. of India

Affiliated to Tripura University (A Central University),

Department of Mechanical Engineering



## List of Laboratory Experiments

Manufacturing Process Lab-I							
Course Code	Hours / Week				Maximum Marks		
PC ME 409	L	T	P	C	CIA	SEE	Total
	0	0	2	0	40	60	100
Number of classes: 24 Hours			Prerequisites: Manufacturing Process				
Branch: ME			Semester: IV				
<b>Course overview:</b> The <i>Manufacturing Process Lab</i> course provides hands-on experience in various manufacturing techniques and processes. Students will explore methods such as machining, welding, casting, and additive manufacturing, while learning about materials, tooling, and equipment used in production. The course emphasizes practical skills, safety protocols, and process optimization. By working on real-world projects, students develop an understanding of the manufacturing environment, quality control, and cost-effective production strategies. Ideal for those seeking careers in engineering, design, and industrial manufacturing, this course equips students with foundational knowledge in the field’s core processes.							
<b>Course objectives:</b> <b>Hands-on Experience:</b> Provide practical exposure to various manufacturing processes such as machining, casting, welding, and additive manufacturing. <b>Technical Skills Development:</b> Equip students with the skills to operate manufacturing tools and machinery, focusing on precision and efficiency. <b>Process Optimization:</b> Teach methods for evaluating and improving manufacturing workflows, ensuring high-quality production and cost-efficiency. <b>Safety and Quality Control:</b> Instill knowledge of safety standards and quality assurance practices essential for maintaining a safe and productive manufacturing environment.							
<b>Course outcomes:</b>							
CO Number	CO Description						K-level
CO-1	To know Metal Forming operation with various equipments						K-3
CO-2	To perform Hydro forming operation.						K-4
CO-3	To perform Ring compression test						K-4
CO-4	To study Forging defects.						K-4
Sl. No.	EXPERIMENT NAME						CO
1.	Familiarization with Metal Forming operation and Equipments						CO-1
2.	To perform upsetting operation						CO-1
3.	To perform Extrusion operation						CO-1



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4.	To perform Multi step forging operation.	CO-1
5.	To perform Hammer Forging operation	CO-2
6.	To perform Rolling operation.	CO-4
7.	To perform Sheet metal working operation.	CO-3
8.	To perform Orbital Forming operation.	CO-1
9.	To perform Hydro forming operation.	CO-2
10.	To perform Stretch forming operation	CO-1
11.	To perform Cogging operation	CO-3
12.	To perform Swaging operation	CO-2
13.	To perform Stamping operation.	CO-3
14.	To perform Quenching operation	CO-4
15.	To perform Riveting operation	CO-4
16.	To perform Ring compression test	CO-3
17.	To study Forging defects.	CO-4