

AMBALA COLLEGE OF ENGINEERING AND APPLIED RESEARCH, AMBALA
Department of Mechanical Engineering

Lesson Plan

Name of Institute : Ambala College of Engineering and Applied Research

Name of the Faculty member : Sandeep Kumar

Discipline : Mechanical Engineering

Semester :6th

Subject : Manufacturing Technology (MEC-302A)

Lesson Plan Duration : 15 weeks (from Jan 2026 to May 2026)

Work Load : L-3 T-0 P-0

Week	Theory	
	Lecture day	Topic (including assignment/ test)
1 st	1.	Foundry: Introduction to Casting Processes
	2.	Basic Steps in Casting Process
	3.	Pattern, Types of Patterns, Pattern Allowances
2 nd	4.	Pattern Material
	5.	Risers, Runners, Gates
	6.	Design Risers, Runners, Gates, Revision and discuss above topics
3 rd	7.	Moulding Sand and its composition, Sand Preparation
	8.	Molding Methods
	9.	Core Sands and Core Making, Core Assembly, Mold Assembly
4 th	10.	Melting (Cupola) and Pouring
	11.	Fettling, Casting Defects and Remedies
	12.	Revision and discuss above topics
5 th	13.	Cold Working (Sheet Metal Work): Sheet Metal Operations
	14.	Measuring, Layout Marking
	15.	Shearing, Punching, Blanking, Piercing
6 th	16.	Forming Process
	17.	Bending and Joining,
	18.	Advantages and Limitations
7 th	19.	Hot Working Processes: Introduction to Hot Working

	20.	Principles of Hot Working Processes
	21.	Forging ,Rolling
8 th	22.	Extrusion
	23.	Wire Drawing
	24.	Revision and discuss above topics
9 th	25.	Welding: Introduction to Welding, Classification of Welding Processes
	26.	Welding: Oxy- Acetylene Welding
	27.	Resistance Welding; Spot and Seam Welding.Arc Welding: Metal Arc
10 th	28.	TIG & MIG Welding
	29.	Welding Defects and Remedies, Soldering & Brazing
	30.	Test
11 th	31.	Characterization of engineering powders: geometric features, other features
	32.	production of metallic powders: atomization: other production methods, conventional pressing
	33.	Sintering: blending and mixing of the powders,
12 th	34.	Compaction, sintering, heat treatment and finishing
	35.	Design considerations in powder metallurgy,
	36.	Revision and discuss above topics
13 th	37.	Properties of polymer melts, extrusion, production of sheet
	38.	Revision and discuss above topics
	39.	Properties of polymer melts, extrusion, production of film
14 th	40.	Fiber and filament production (spinning)
	41.	Coating processes, injection molding, compression
	42.	Transfer molding,
15 th	43.	Blow molding
	44.	Rotational molding, thermoforming
	45.	Revision and discuss above topics

(Signature of the teacher concerned with date)