

## LESSON PLAN 2023-24

SUBJECT :PRODUCTION TECHNOLOGY (3RD SEM)

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Class No.	Topic	Subtopics	Teaching Aids/Activities
1	Extrusion	Definition, Classification	Diagrams, Chart
2	Direct Extrusion	Process Steps, Advantages, Applications	Animation, Video
3	Indirect Extrusion	Process Flow, Difference from Direct Method	PPT, Model
4	Impact Extrusion	Principle, Materials Used	Cut-section Model
5	Rolling	Definition, Classification	Industrial Video
6	Hot vs Cold Rolling	Process Difference, Applications, Microstructure	Charts, Metallurgy Samples
7	Rolling Mills	Types – Two high, Three high, Cluster, Tandem	Models, Diagrams
8	Casting Overview	Definition, Classification of Casting Processes	Charts, Process Flow Diagrams
9	Sand Mould Casting	Step-by-step Procedure	Sand Mould Demo, Video
10	Molding Sands	Types, Composition, Properties	Sample Sands, PPT
11	Patterns	Types, Allowances	Physical Patterns, Charts
12	Core Classification	Hollow Sections, Core Types	Sample Cores, Diagrams
13	Cupola Furnace	Construction, Operation	Cut-section Model, Animation
14	Crucible Furnace	Types, Materials Used	Chart, Video
15	Die Casting	Gravity Die Casting, Pressure Die Casting	Video, Casting Models
16	Centrifugal Casting	True Centrifugal, Centrifuging – Advantages, Limitations	Working Diagrams, Animation
17	Application of Centrifugal Casting	Use in Pipes, Engine Liners	Real-world Examples
18	Casting Defects – I	Blow holes, Misruns, Shrinkage Cavities – Causes	Sample Defects
19	Casting Defects – II	Hot tears, Cold shuts, Remedies	Charts, Process Video
20	Defects Remedies	Inspection Techniques, NDT in Casting	Video, Tools
21	Solidification Concept	Directional Solidification, Chvorinov's Rule	Simulation Software
22	Gating System	Sprue, Runner, Ingate, Riser Design	Diagrams
23	Revision & Practice	Quiz on Casting Process	Worksheets, Question Bank
24	Powder Metallurgy	Definition, Process Overview	Flowchart, Intro Video
25	Advantages	Material Saving, High Precision, Mass Production	PPT
26	Powder Production	Atomization, Electrolysis, Crushing	Sample Powders
27	Mixing & Compacting	Tools & Equipment Used	Demo Video

28	Sintering	Furnace Types, Temperature Control	Animation, Lab Visit
29	Economics	Cost Comparison with Conventional Methods	Case Study
30	Applications	Automotive, Aerospace, Electrical Components	Real Components, Photos
31	Introduction to Press Work	Blanking, Piercing, Trimming – Definitions	Videos, Physical Samples
32	Tools	Dies and Punches	Workshop Display, Cut Models
33	Simple Dies	Working and Construction	Charts, Diagrams
34	Compound Dies	Construction and Working Principle	Cut Models
35	Progressive Dies	Stage-wise Working	Animated Sequence, Model
36	Advantages & Disadvantages	Of all die types	Comparison Chart
37	Press Tool Applications	Industrial Examples, Faults	Case Studies
38	Introduction	Definition, Need for Jigs & Fixtures	Workshop Samples, Videos
39	Advantages	Productivity, Quality, Consistency	PPT, Case Study
40	Principle of Location	3-2-1 Principle	Diagrams, Blocks
41	Method of Location	Pins, Bushes, Stops	Demo Models
42	Jigs	Plate Jig, Channel Jig, Template Jig	Physical Jigs
43	Fixtures	Milling Fixture, Lathe Fixture, Drilling Fixture	Models
44	Application & Design	Industry Usage, Materials, Standard Elements	CAD Design, Drawings
45	Introduction to Welding	Definition, Classification of Welding Processes	Poster, Video
46	Welding Fluxes	Purpose, Types – Acidic, Basic	Sample Fluxes, Diagrams
47	Oxy-Acetylene Welding	Principle, Setup	Torch Demo, Safety Demo
48	Types of Flames	Neutral, Carburizing, Oxidizing	Live Flame Adjustment
49	Arc Welding	Setup, Electrode, Striking Arc	Welding Machine Demo
50	Electrodes in Arc Welding	Coating Types, Sizes, Specifications	Sample Electrodes, Charts
51	Resistance Welding	Definition and Types	Animation, Working Demo
52	Butt Welding	Procedure, Equipment	Case Video
53	Spot Welding	Setup, Current, Time Control	Live Demonstration
54	Flash & Projection Welding	Construction, Working	Charts, Videos
55	Seam Welding	Overlapping Welds, Rotating Electrodes	Video Example
56	TIG Welding	Tungsten Electrode, Argon Gas Flow	Demo Unit
57	MIG Welding	Wire Feed, CO <sub>2</sub> Shield, Current Setting	Demo Unit
58	Welding Defects – I	Undercut, Porosity, Slag Inclusion	Sample Plates
59	Welding Defects – II	Remedies, Causes	Posters, Inspection Tools
60	Revision & Class Test	Practice MCQs, Process Flow Chart Recap	Test Paper, Worksheets