

PADMASHREE KRUTARTHA ACHARYA INSTITUTE OF ENGINEERING & TECHNOLOGY, BARGARH



LESSON PLAN Session-2024-2025

Semester:4th

Discipline: MECHANICAL ENGINEERING

Subject: **MANUFACTURING TECHNOLOGY**

Name of the Teaching Faculty: Mr. Sunil kumar mahakud

Subject: MECHANICAL METALLURGY (Th-02) No. of Days/per week class allotted : 4

Semester From Date : 04-02-2025 To Date: 17-05-2025

No. of Weeks : 16

Week	Class Day	Theory /Practical Topics
1	1	introduction to manufacturing technology
	2	Introduction to Tool Materials
	3	Composition of various tool materials
	4	Physical properties& uses of such tool materials.
2	5	Introduction Cutting Tools
	6	Cutting action of various and tools such as Chisel, hacksaw blade, dies and reamer
	7	Turning tool geometry and purpose of tool angle
	8	Machining process parameters (Speed, feed and depth of cut)
3	9	Coolants and lubricants in machining and purpose
	10	Instruction to Lathe Machine
	11	Construction and working of lathe and CNC lathe Major components of a lathe and their function
	12	Operations carried out in a lathe(Turning, thread cutting, taper turning internal machining, parting off, facing, knurling)

Saini Kumar Mohan
Signature of the Faculty

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No. of Weeks : 15

Week	Class Day	Theory /Practical Topics
4	13	Safety measures during machining
	14	Capstan lathe
	15	Difference with respect to engine lathe
	16	Major components and their function, Define multiple tool holders
5	17	Turret Lathe Difference with respect to capstan lathe
	18	Major components and their function
	19	Draw the tooling layout for preparation of a hexagonal bolt & bush
	20	Class test-1 (20 min) Introduction to Shaper
6	21	Potential application areas of a shaper machine
	22	Major components and their function
	23	Explain the automatic able feed mechanism
	24	Explain the construction & working of tool head

Sunit Kumar Malhotra
Signature of the Faculty

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Week	Class Day	Theory /Practical Topics
7	25	Explain the quick return mechanism through sketch
	26	State the specification of a shaping machine.
	27	Planning Machine
	28	Application area of a planer and its difference with respect to shaper
8	29	Major components and their functions.
	30	Class test-2 (20 min) The table drive mechanism
	31	Working of tool and tool support
	32	Clamping of work through sketch
9	33	Class test-3 (20 min) Milling Machine
	34	Types of milling machine and operations performed by them and also same for CNC milling machine
	35	Explain work holding attachment
	36	Construction & working of simple dividing head, universal dividing head

Senil Kumar Mahesh
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Week	Class Day	Theory /Practical Topics
10	37	Procedure of simple and compound indexing 6.5 Illustration of different indexing methods
	38	Introduction to Slotter Major components and their function
	39	Construction and working of slotter machine
	40	Tools used in slotter
11	41	Grinding ,Significance of grinding operations
	42	Manufacturing of grinding wheels
	43	Criteria for selecting of grinding wheels
	44	Specification of grinding wheels with example Working of Cylindrical Grinder
12	45	Surface Grinder, Centreless Grinder
	46	Internal Machining operations Classification of drilling machines
	47	Working of Bench drilling machine
	48	Pillar drilling machine

Semil Kumar Malahad.

Signature of the Faculty

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Week	Class Day	Theory /Practical Topics
13	49	Radial drilling machine
	50	Boring Basic Principle of Boring
	51	Different between Boring and drilling
	52	9.3 Broaching Types of Broaching(pull type, push type)
14	53	Advantages of Broaching and applications
	54	Surface finish, lapping 10.
	55	Definition of Surface finish
	56	Description of lapping& explain their specific cutting
15	57	Question answer-2021
	58	Question answer-2022
	59	Question answer-2023
	60	Question answer-2024

Srenil Kumar Malhotra
Signature of the Faculty