NILASAILA INSTITUTE OF SCIENCE & TECHNOLOGY
SERGARH-756060, BALASORE (ODISHA)
(Approved by AICTE& affiliated to SCTE&VT, Odisha)

LESSON PLAN

SUBJECT: TH-2 (MANUFACTURING TECHNOLOGY)

Name Of The Faculty :- Er. Yashobanta das
Branch :- Mechanical Engineering
Session :- 2024-25
Semester :- 4th
Examination :- 2025 (s)

CHAPTER WISE DISTRIBUTION OF PERIODS

1	Tool Materials	4	4
2	Cutting Tools	6	6
3	Lathe Machine	8	8
4	Shaper	6	6
5	Planning Machine	6	6
6	Milling Machine	8	8
7	Slotter	6	6
8	Grinding	6	8
9	Internal Machining operations	6	6
10	Surface finish, lapping	4	4
	Total Period	60	62

Y Das 08/02/2025
Sign of Faculty

Sign of H.O.D. 3/02/25

DISCIPLINE: MECHANICAL ENGINEERING	SEMESTER: 4TH	NAME OF THE TEACHING FACULTY: Er. Yashobanta das	
		SESSION:2024-25	EXAMINATION:2025(S)

Week	Class Day	Topics to be Covered
1st	1st	1.0 Tool Materials
	2nd	1.1 Composition of various tool materials
	3rd	1.1 Composition of various tool materials
	4th	1.2 Physical properties& uses of such tool material
2nd	1st	2.1 Cutting Tools
	2nd	2.1 Cutting action of various and tools such as Chisel, hacksaw blade, dies and reamer
	3rd	2.1 Cutting action of various and tools such as Chisel, hacksaw blade, dies and reamer
	4th	2.3 Turning tool geometry and purpose of tool angle
3rd	1st	2.5 Machining process parameters (Speed, feed and depth of cut)
	2nd	2.6 Coolants and lubricants in machining and purpose
	3rd	3.0 Lathe Machine
	4th	3.1 Construction and working of lathe and CNC lathe • Major components of a lathe and their function • Operations carried out in a lathe(Turning, thread cutting, taper turning, internal machining, parting off, facing, knurling)
4th	1st	3.1 Construction and working of lathe and CNC lathe • Major components of a lathe and their function • Operations carried out in a lathe(Turning, thread cutting, taper turning, internal machining, parting off, facing, knurling)
	2nd	3.2 Capstan lathe • Difference with respect to engine lathe • Major components and their function • Define multiple tool holders
4th	3rd	3.2 Capstan lathe • Difference with respect to engine lathe • Major components and their function • Define multiple tool holders
	4th	3.3 Turret Lathe • Difference with respect to capstan lathe • Major components and their function
5th	1st	3.3 Turret Lathe • Difference with respect to capstan lathe • Major components and their function

Week	Class Day	Topics to be Covered
5th	2nd	3.4 Draw the tooling layout for preparation of a hexagonal bolt &bush
	3rd	4.0 Shaper 4.1 Potential application areas of a shaper machine
	4th	4.2 Major components and their function
6th	1st	4.3 Explain the automatic able feed mechanism
	2nd	4.4 Explain the construction &working of tool head
	3rd	4.5 Explain the quick return mechanism through sketch
	4th	4.6 State the specification of a shaping machine.
7th	1st	5.0 Planning Machine
	2nd	5.1 Application area of a planer and its difference with respect to shaper
	3rd	5.2 Major components and their functions
	4th	5.3 The table drive mechanism
8th	1st	5.4 Working of tool and tool support
	2nd	5.5 Clamping of work through sketch.
	3rd	6.0 Milling Machine
	4th	6.1 Types of milling machine and operations performed by them and also same for CNC milling machine
9th	1st	6.1 Types of milling machine and operations performed by them and also same for CNC milling machine
	2nd	6.2 Explain work holding attachment
	3rd	6.3 Construction & working of simple dividing head, universal dividing head
	4th	6.3 Construction & working of simple dividing head, universal dividing head
10th	1st	6.4 Procedure of simple and compound indexing
	2nd	6.5 Illustration of different indexing methods
	3rd	7.0 Slotter
	4th	7.1 Major components and their function
11th	1st	7.1 Major components and their function
	2nd	7.2 Construction and working of slotter machine
	3rd	7.3 Tools used in slotter

Week	Class Day	Topics to be Covered
11th	4th	INTERNAL ASSESMENT
12th	1st	INTERNAL ASSESMENT
	2nd	8.0 Grinding
	3rd	8.1 Significance of grinding operations
	4th	8.2 Manufacturing of grinding wheels
13th	1st	8.3 Criteria for selecting of grinding wheels
	2nd	8.4 Specification of grinding wheels with example Working of • Cylindrical Grinder • Surface Grinder • Centreless
	3rd	8.4 Specification of grinding wheels with example Working of • Cylindrical Grinder • Surface Grinder • Centreless
	4th	9.1 Working of • Bench drilling machine • Pillar drilling machine • Radial drilling machine
14th	1st	9.1 Working of • Bench drilling machine • Pillar drilling machine • Radial drilling machine
	2nd	9.1 Working of • Bench drilling machine • Pillar drilling machine • Radial drilling machine
	3rd	9.2 Boring • Basic Principle of Boring • Different between Boring and drilling
	4th	9.3 Broaching • Types of Broaching(pull type, push type) • Advantages of Broaching and applications
15th	1st	10 Surface finish, lapping
	2nd	10.1 Definition of Surface finish
	3rd	10.2 Description of lapping& explain their specific cutting.
	4th	10.2 Description of lapping& explain their specific cutting.

Sign of Faculty 31/01/2025

Sign of H.O.D. 31/01/25