



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



LESSON PLAN

SUBJECT: Th-2 (MANUFACTURING TECHNOLOGY)

CHAPTER WISE DISTRIBUTION OF PERIODS

Sl.No.	Name of the chapter as per the Syllabus	No. of Periods as per the Syllabus	No. of periods actually needed
1	Tool Materials	4	4
2	Cutting Tools	6	6
3	Lathe Machine	8	8
4	Shaper	6	6
5	Planing Machine	6	6
6	Milling Machine	8	8
7	Slotter	6	6
8	Grinding	6	6
9	Internal Machining operations	6	6
10	Surface finish, lapping	4	4
11	Total Period:	60	60

Discipline: MECHANICAL ENGINEERING	Semester: 4th	Name of the Teaching Faculty: Er.YASOBANTA DAS
Week	Class Day	Theory / Practical Topics
1 st	1 st	1.0 Tool Materials
	2 nd	1.1 Composition of various tool materials
	3 rd	1.1 Composition of various tool materials
	4 th	1.2 Physical properties& uses of such tool material
2 nd	1 st	2.1 Cutting Tools
	2 nd	2.1 Cutting action of various and tools such as Chisel, hacksaw blade, dies and reamer
	3 rd	2.1 Cutting action of various and tools such as Chisel, hacksaw blade, dies and reamer
	4 th	2.3 Turning tool geometry and purpose of tool angle
3 rd	1 st	2.5 Machining process parameters (Speed, feed and depth of cut)
	2 nd	2.6 Coolants and lubricants in machining and purpose

3 rd	3 rd	3.0 Lathe Machine
	4 th	Construction and working of lathe and CNC lathe <ul style="list-style-type: none"> • 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)
4 th	1 st	Construction and working of lathe and CNC lathe <ul style="list-style-type: none"> • 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)
	2 nd	Capstan lathe <ul style="list-style-type: none"> • Difference with respect to engine lathe • Major components and their function 3.2 Capstan lathe <ul style="list-style-type: none"> • Define multiple tool holders
	3 rd	<ul style="list-style-type: none"> • Difference with respect to engine lathe • Major components and their function • Define multiple tool holders
	4 th	Turret Lathe <ul style="list-style-type: none"> • Difference with respect to capstan lathe • Major components and their function
5 th	1 st	Turret Lathe <ul style="list-style-type: none"> • Difference with respect to capstan lathe • Major components and their function
	2 nd	3.4 Draw the tooling layout for preparation of a hexagonal bolt & bush
	3 rd	Shaper Potential application areas of a shaper machine
	4 th	4.2 Major components and their function
6 th	1 st	4.3 Explain the automatic able feed mechanism

6 th	2 nd	4.4 Explain the construction & working of tool head
	3 rd	4.5 Explain the quick return mechanism through sketch
	4 th	4.6 State the specification of a shaping machine.
7 th	1 st	5.0 Planning Machine
	2 nd	5.1 Application area of a planer and its difference with respect to shaper
	3 rd	5.2 Major components and their functions
	4 th	5.3 The table drive mechanism
8 th	1 st	5.4 Working of tool and tool support
	2 nd	5.5 Clamping of work through sketch.
	3 rd	6.0 Milling Machine
	4 th	6.1 Types of milling machine and operations performed by them and also same for CNC milling machine

9 th	1 st	6.1 Types of milling machine and operations performed by them and also same for CNC milling machine
	2 nd	6.2 Explain work holding attachment
	3 rd	6.3 Construction & working of simple dividing head, universal dividing head
	4 th	6.3 Construction & working of simple dividing head, universal dividing head
10 th	1 st	6.4 Procedure of simple and compound indexing
	2 nd	6.5 Illustration of different indexing methods
	3 rd	7.0 Slotter
	4 th	7.1 Major components and their function
11 th	1 st	7.1 Major components and their function
	2 nd	7.2 Construction and working of slotter machine
	3 rd	7.2 Construction and working of slotter machine

11 th	4 th	7.3 Tools used in slotter
12 th	1 st	8.0 Grinding
	2 nd	8.1 Significance of grinding operations
	3 rd	8.2 Manufacturing of grinding wheels
	4 th	8.3 Criteria for selecting of grinding wheels
13 th	1 st	Specification of grinding wheels with example Working of <ul style="list-style-type: none"> • Cylindrical Grinder • Surface Grinder
	2 nd	Specification of grinding wheels with example Working of <ul style="list-style-type: none"> • Cylindrical Grinder • Surface Grinder
	3 rd	9.0 Internal Machining operations Classification of drilling machines
	4 th	Working of <ul style="list-style-type: none"> • Bench drilling machine • Pillar drilling machine • Radial drilling machine
14 th	1 st	Working of <ul style="list-style-type: none"> • Bench drilling machine • Pillar drilling machine • Radial drilling machine
	2 nd	Boring <ul style="list-style-type: none"> • Basic Principle of Boring • Different between Boring and drilling

14th	3rd	Boring <ul style="list-style-type: none"> • Basic Principle of Boring • Different between Boring and drilling
	4th	Broaching <ul style="list-style-type: none"> • 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.