



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. Pradyumna Kumar Khilar

Branch :- Automobile 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	Planing 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

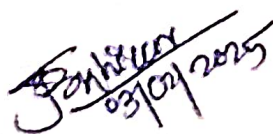
Pradyumna Kumar Khilar
03/02/2025
Sign of Faculty


M. J.
03/02/25
Sign of H.O.D.

DISCIPLINE: AUTOMOBILE ENGINEERING	SEMESTER: 4TH	NAME OF THE TEACHING FACULTY: Er.Pradyumna Kumar Khilar	
		SESSION:2024-25	EXAMINATION:2025(S)
Week	Class Day	Topics to be Covered	
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	3.0 Lathe Machine	
	4 th	3.1 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	3.1 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	3.2 Capstan lathe <ul style="list-style-type: none"> • Difference with respect to engine lathe • Major components and their function • Define multiple tool holders 	
4 th	3 rd	3.2 Capstan lathe <ul style="list-style-type: none"> • Difference with respect to engine lathe • Major components and their function • Define multiple tool holders 	
	4 th	3.3 Turret Lathe <ul style="list-style-type: none"> • Difference with respect to capstan lathe • Major components and their function 	
5 th	1 st	3.3 Turret Lathe <ul style="list-style-type: none"> • Difference with respect to capstan lathe • Major components and their function 	

Week	Class Day	Topics to be Covered
5 th	2 nd	3.4 Draw the tooling layout for preparation of a hexagonal bolt & bush
	3 rd	4.0 Shaper 4.1 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 table feed mechanism
	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	7.3 Tools used in slotter

Week	Class Day	Topics to be Covered
11 th	4 th	INTERNAL ASSESMENT
12 th	1 st	INTERNAL ASSESMENT
	2 nd	8.0 Grinding
	3 rd	8.1 Significance of grinding operations
	4 th	8.2 Manufacturing of grinding wheels
13 th	1 st	8.3 Criteria for selecting of grinding wheels
	2 nd	8.4 Specification of grinding wheels with example working of <ul style="list-style-type: none"> • Cylindrical Grinder • Surface Grinder • Centreless
	3 rd	<ul style="list-style-type: none"> • Cylindrical Grinder • Surface Grinder • Centreless
	4 th	9.1 Working of <ul style="list-style-type: none"> • Bench drilling machine • Pillar drilling machine • Radial drilling machine
14 th	1 st	9.1 Working of <ul style="list-style-type: none"> • Bench drilling machine • Pillar drilling machine • Radial drilling machine
	2 nd	9.1 Working of <ul style="list-style-type: none"> • Bench drilling machine • Pillar drilling machine • Radial drilling machine
	3 rd	9.2 Boring <ul style="list-style-type: none"> • Basic Principle of Boring • Different between Boring and drilling
	4 th	9.3 Broaching <ul style="list-style-type: none"> • Types of Broaching(pull type, push type) • Advantages of Broaching and applications
15 th	1 st	10 Surface finish, lapping
	2 nd	10.1 Definition of Surface finish
	3 rd	10.2 Description of lapping& explain their specific cutting.
	4 th	10.2 Description of lapping& explain their specific cutting.


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 Sign of H.O.D.