

GOVT. POLYTECHNIC, NAYAGARH  
LESSON PLAN  
4<sup>th</sup> SEMESTER MECHANICAL ENGINEERING (2022-23)  
SUBJECT- MANUFACTURING TECHNOLOGY (TH.2)

(w.e.f 14/02/2023)

Name of Faculty: Himanshu Patra , Lect. (PTGF)

TOTAL PERIODS-60  
THEORY-4P/WEEK

Sl No.	week	Day	Topics to be covered
1	1 <sup>st</sup>	1 <sup>st</sup> day	Composition of various tool materials
		2 <sup>nd</sup> day	Physical properties& uses of such tool materials
		3 <sup>rd</sup> day	Introduction to Cutting tool
		4 <sup>th</sup> day	Cutting action of various hand tools such as Chisel and Hack saw blade
<b>Sl No.</b>	<b>week</b>	<b>Day</b>	<b>Topics to be covered</b>
2	2 <sup>nd</sup>	1 <sup>st</sup> day	Cutting action of various hand tools such as dies and reamer
		2 <sup>nd</sup> day	Cutting Tool geometry and purpose of tool angle
		3 <sup>rd</sup> day	Cutting Tool Nomenclature
		4 <sup>th</sup> day	Machining process parameters
<b>Sl No.</b>	<b>week</b>	<b>Day</b>	<b>Topics to be covered</b>
3	3 <sup>rd</sup>	1 <sup>st</sup> day	Types of Coolant and lubricant in machining purposes
		2 <sup>nd</sup> day	Construction and working of lathe machine
		3 <sup>rd</sup> day	Major components of a lathe and their function
		4 <sup>th</sup> day	Turning, Thread cutting and Taper turning operation
<b>Sl No.</b>	<b>week</b>	<b>Day</b>	<b>Topics to be covered</b>
4	4 <sup>th</sup>	1 <sup>st</sup> day	Internal machining, parting off, facing and knurling operation
		2 <sup>nd</sup> day	Safety measures during machining
		3 <sup>rd</sup> day	Major components and function of Capstan Lathe
		4 <sup>th</sup> day	Major components and function of Turret Lathe Lathe
<b>Sl No.</b>	<b>week</b>	<b>Day</b>	<b>Topics to be covered</b>
5	5 <sup>th</sup>	1 <sup>st</sup> day	Draw the tooling lay out for preparation of a hexagonal bolt & bush
		2 <sup>nd</sup> day	Potential application areas of a shaper machine
		3 <sup>rd</sup> day	Major components and function of Shaper machine
		4 <sup>th</sup> day	Automatic table feed mechanism of shaper
<b>Sl No.</b>	<b>week</b>	<b>Day</b>	<b>Topics to be covered</b>
6	6 <sup>th</sup>	1 <sup>st</sup> day	Construction & Working of tool head
		2 <sup>nd</sup> day	Quick return mechanism through sketch
		3 <sup>rd</sup> day	State the specification of a shaping machine.
		4 <sup>th</sup> day	Application area of a Planner and its difference with respect to shaper
<b>Sl No.</b>	<b>week</b>	<b>Day</b>	<b>Topics to be covered</b>

7	7 <sup>th</sup>	1 <sup>st</sup> day	Major components and functions of Planner
		2 <sup>nd</sup> day	Table drive mechanism of Planner
		3 <sup>rd</sup> day	Working of tool and tool support
		4 <sup>th</sup> day	Clamping of work through sketch.
<b>Sl No.</b>	<b>week</b>	<b>Day</b>	<b>Topics to be covered</b>
8	8 <sup>th</sup>	1 <sup>st</sup> day	Types of milling machine and operations performed by them
		2 <sup>nd</sup> day	Parts of Column and Knee type Milling Machine
		3 <sup>rd</sup> day	Construction & Working of simple dividing head and Universal dividing head
		4 <sup>th</sup> day	Procedure of simple Indexing operation
<b>Sl No.</b>	<b>week</b>	<b>Day</b>	<b>Topics to be covered</b>
9	9 <sup>th</sup>	1 <sup>st</sup> day	Procedure of Compound Indexing operation
		2 <sup>nd</sup> day	Numericals on Indexing operation
		3 <sup>rd</sup> day	Illustration of different indexing methods
		4 <sup>th</sup> day	Doubt clearance
<b>Sl No.</b>	<b>week</b>	<b>Day</b>	<b>Topics to be covered</b>
10	10 <sup>th</sup>	1 <sup>st</sup> day	Major components and their function of Slotter machine Tool
		2 <sup>nd</sup> day	Construction and working of slotter machine
		3 <sup>rd</sup> day	Tools used in Slotter machine
		4 <sup>th</sup> day	Uses of slotter machine tool
<b>Sl No.</b>	<b>week</b>	<b>Day</b>	<b>Topics to be covered</b>
11	11 <sup>th</sup>	1 <sup>st</sup> day	Introduction to Grinding machine and Significance of grinding operations
		2 <sup>nd</sup> day	Manufacturing of grinding wheels
		3 <sup>rd</sup> day	Criteria for selecting of grinding wheels
		4 <sup>th</sup> day	Specification of grinding wheels with example
<b>Sl No.</b>	<b>week</b>	<b>Day</b>	<b>Topics to be covered</b>

12	12 <sup>th</sup>	1 <sup>st</sup> day	Working of Cylindrical Grinder machine
		2 <sup>nd</sup> day	Working of Surface Grinder machine
		3 <sup>rd</sup> day	Working of Centreless Grinder machine
		4 <sup>th</sup> day	Introduction to Internal Machining operations
<b>Sl No.</b>	<b>week</b>	<b>Day</b>	<b>Topics to be covered</b>
13	13 <sup>th</sup>	1 <sup>st</sup> day	Classification of drilling machines
		2 <sup>nd</sup> day	Working of Bench drilling machine and Pillar drilling machine
		3 <sup>rd</sup> day	Working of Radial drilling machine
		4 <sup>th</sup> day	Basic Principle of Boring and Different between Boring and Drilling
<b>Sl No.</b>	<b>week</b>	<b>Day</b>	<b>Topics to be covered</b>
14	14 <sup>th</sup>	1 <sup>st</sup> day	Types of Broaching(pull type and push type)
		2 <sup>nd</sup> day	Advantages of Broaching and applications
		3 <sup>rd</sup> day	Application and Limitation of Broaching
		4 <sup>th</sup> day	Introduction to Surface finishing Operation
<b>Sl No.</b>	<b>week</b>	<b>Day</b>	<b>Topics to be covered</b>
15	15 <sup>th</sup>	1 <sup>st</sup> day	Definition of Surface finish
		2 <sup>nd</sup> day	Description of Lapping & their specific cutting
		3 <sup>rd</sup> day	Difference between Lapping and Honing surface finish operation
		4 <sup>th</sup> day	Doubt clearance and Revision