

**GOVT. POLYTECHNIC, NAYAGARH**  
**LESSON PLAN**  
**4<sup>th</sup> SEMESTER MECHANICAL ENGINEERING (2023-24)**  
**SUBJECT- MANUFACTURING TECHNOLOGY (TH.2)**

(w.e.f -16/01/2024)

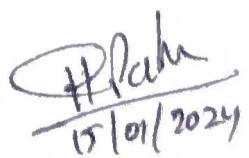
Name of Faculty: Himanshu Patra , Lect. (GF)

**TOTAL PERIODS-60**  
**THEORY-4P/WEEK**

Sl No.	week	Day	Topics to be covered
1	1 <sup>st</sup>	1 <sup>st</sup> day	Tool Materials: Composition of various tool materials
		2 <sup>nd</sup> day	Physical properties & uses of such tool materials
		3 <sup>rd</sup> day	Cutting tools
		4 <sup>th</sup> day	Cutting action of various hand tools such as Chisel and Hack saw blade
Sl No.	week	Day	Topics to be covered
2	2 <sup>nd</sup>	1 <sup>st</sup> day	Dies and reamer
		2 <sup>nd</sup> day	Turning tool geometry and purpose of tool angle
		3 <sup>rd</sup> day	Machining process parameters (Speed, feed and depth of cut)
		4 <sup>th</sup> day	Coolants and lubricants in machining and purpose
Sl No.	week	Day	Topics to be covered
3	3 <sup>rd</sup>	1 <sup>st</sup> day	Lathe Machine
		2 <sup>nd</sup> day	Construction and working of lathe and CNC lathe
		3 <sup>rd</sup> day	Major components of a lathe and their function
		4 <sup>th</sup> day	Operations carried out in a lathe Turning, thread cutting, taper turning
Sl No.	week	Day	Topics to be covered
4	4 <sup>th</sup>	1 <sup>st</sup> day	Internal machining, parting off, facing, knurling
		2 <sup>nd</sup> day	Safety measures during machining
		3 <sup>rd</sup> day	Capstan lathe: Difference with respect to engine lathe
		4 <sup>th</sup> day	Major components and their function
Sl No.	week	Day	Topics to be covered
5	5 <sup>th</sup>	1 <sup>st</sup> day	Define multiple tool holders
		2 <sup>nd</sup> day	Turret Lathe: Difference with respect to capstan lathe
		3 <sup>rd</sup> day	Major components and their function
		4 <sup>th</sup> day	Draw the tooling layout for preparation of a hexagonal bolt & bush
Sl No.	week	Day	Topics to be covered
6	6 <sup>th</sup>	1 <sup>st</sup> day	Shaper: Potential application areas of a shaper machine
		2 <sup>nd</sup> day	Major components and their function
		3 <sup>rd</sup> day	Explain the automatic table feed mechanism
		4 <sup>th</sup> day	Explain the construction & working of tool head
Sl No.	week	Day	Topics to be covered

7	7th	1 <sup>st</sup> day	Explain the quick return mechanism through sketch
		2 <sup>nd</sup> day	State the specification of a shaping machine.
		3 <sup>rd</sup> day	Planning Machine : Application area of a planer and its difference with respect to shaper
		4 <sup>th</sup> day	Major components and their functions
Sl No.	week	Day	Topics to be covered
8	8th	1 <sup>st</sup> day	The table drive mechanism
		2 <sup>nd</sup> day	Working of tool and tool support
		3 <sup>rd</sup> day	Clamping of work through sketch.
		4 <sup>th</sup> day	Assignment and doubt clearance
Sl No.	week	Day	Topics to be covered
9	9th	1 <sup>st</sup> day	Milling Machine: Types of milling machine and operations performed by them and also same for CNC milling machine
		2 <sup>nd</sup> day	Explain work holding attachment
		3 <sup>rd</sup> day	Construction & working of simple dividing head, universal dividing head
		4 <sup>th</sup> day	Procedure of simple and compound indexing
Sl No.	week	Day	Topics to be covered
10	10 <sup>th</sup>	1 <sup>st</sup> day	Illustration of different indexing methods
		2 <sup>nd</sup> day	Slotter: Major components and their function
		3 <sup>rd</sup> day	Construction and working of slotter machine
		4 <sup>th</sup> day	Tools used in slotter
Sl No.	week	Day	Topics to be covered
11	11 <sup>th</sup>	1 <sup>st</sup> day	Grinding: Significance of grinding operations
		2 <sup>nd</sup> day	Manufacturing of grinding wheels
		3 <sup>rd</sup> day	Criteria for selecting of grinding wheels and Specification of grinding wheels
		4 <sup>th</sup> day	Cylindrical Grinder
Sl No.	week	Day	Topics to be covered

12	12 <sup>th</sup>	1 <sup>st</sup> day	Surface Grinder
		2 <sup>nd</sup> day	Centreless Grinder
		3 <sup>rd</sup> day	Internal Machining operations
		4 <sup>th</sup> day	Classification of drilling machines
Sl No.	week	Day	Topics to be covered
13	13 <sup>th</sup>	1 <sup>st</sup> day	Bench drilling machine
		2 <sup>nd</sup> day	Pillar drilling machine
		3 <sup>rd</sup> day	Radial drilling machine
		4 <sup>th</sup> day	Boring: Basic Principle of Boring
Sl No.	week	Day	Topics to be covered
14	14 <sup>th</sup>	1 <sup>st</sup> day	Different between Boring and drilling
		2 <sup>nd</sup> day	Broaching
		3 <sup>rd</sup> day	Types of Broaching(pull type, push type)
		4 <sup>th</sup> day	Advantages of Broaching and applications
Sl No.	week	Day	Topics to be covered
15	15 <sup>th</sup>	1 <sup>st</sup> day	Definition of Surface finish
		2 <sup>nd</sup> day	Description of lapping& explain their specific cutting.
		3 <sup>rd</sup> day	Assignment evaluation
		4 <sup>th</sup> day	Doubt clearance and Revision

  
 15/01/2024  
 Lect. (AF)