GOVT. POLYTECHNIC, NAYAGARH

LESSON PLAN

4th SEMESTER MECHANICAL ENGINEERING (2024-25)

SUBJECT- MANUFACTURING TECHNOLOGY (TH.2)

(w.e.f -04/02/2025)

Name of Faculty: **PRAFULLA KUMAR MALLICK, Lect. (GF)**

TOTAL PERIODS-60
THEORY-4P/WEEK

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

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

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

Prafulla Ku. Mallick
03/02/2025