GOVERNMENT POLYTECHNIC, DARLIPALI
SESSION: 2025-26
LESSON PLAN

Discipline: MECHATRONICS ENGG.	Semester: 3RD		Name of the Teaching Faculty: DUSMANTA BARIHA
Subject: MANUFACTURING TECHNOLOGY (MEPC201)	No. of days/ per week class allotted: 3	Unit	Semester From Date : 14/07/2025 to Date: 15/11/2025 No. of Weeks: 15
Week	Class Day		Theory Topics
1st	1st	1	**General Safety Considerations on Machining Workshop**
	2nd	2	**Metal Cutting**: Introduction, Orthogonal and Oblique cutting,
	3rd		Classification of cutting tools, Tool geometry in Co – ordinate System,
2nd	1st		Types of chips, Sources of heat in metal cutting, Tool failure, Tool life,
	2nd		Tool wear, Machinability,Cutting Tool Materials,
	3rd	3	**Cutting Fluids**: Introduction, Functions of Cutting Fluids
3rd	1st		Qualities of Good Cutting Fluids
	2nd		Classification of Cutting Fluids
	3rd		Application of Cutting Fluids
4th	1st		Safety in the Use of Cutting Fluids
	2nd		**Class Test-1**
	3rd	4	**Lathe Machine**: Introduction and Classification of lathe machine
5th	1st		Working Principle and construction of Engine lathes
	2nd		Lathe Operations: Turning, Facing,
	3rd		Taper turning, Threading,
6th	1st		Drilling, Boring, Reaming and Knurling
	2nd		Cutting variables: Cutting Speed, Feed
	3rd		Depth of Cut, Machining Time
7th	1st	5	**Milling Machines**: Introduction and Working Principle, Classification of Milling Machines
	2nd		Principal Parts of Universal Milling Machine,
	3rd		Milling Cutters: types, nomenclature and uses
8th	1st		Milling Operations: Plain, Face, Angular, Form, Gang and Keyway Milling
	2nd		Milling Methods: Peripheral, Up, Down, Face and End Milling,
	3rd		Indexing Methods: Direct, Plain, Compound
9th	1st		Differential Indexing, Cutting Speed
	2nd		Feed and Depth of Cut, Machining Time.
	3rd		**Class Test-2**
10th	1st	6	**Drilling Machines**: Introduction and Working Principle,
	2nd		Classification of Drill Presses,
	3rd		Work Holding attachments and accessories,
11th	1st		Drilling Tools,
	2nd		Drilling Operations: Drilling, Counter- boring, Countersinking and Reaming
	3rd		Cutting speed and Machining Time.

12th	1st		**1st Internal Assesment**
	2nd	7	**Shaping Machines**: Introduction and Classification of Shaping Machines
	3rd		Working Principle
13th	1st		Shaper Mechanism – Quick Return Mechanism,Shaper Tools,
	2nd		Work holding devices and tool holding devices
	3rd		Shaper Operations – Horizontal, Vertical and Angular cutting,
14th	1st		Cutting Speed, Feed and Depth of Cut, Machining Time.
	2nd	8	**Grinding Machines**: Introduction and Working Principle
	3rd		Grain, Grade and Structure
15th	1st		Specification of Grinding Wheels,
	2nd		Grinding Operations: Cylindrical, Internal, Surface, Face, Form
	3rd		Center less, Grinding and Sharpening of Cutting Tools,
16th	1st		Cutting Speed, Feed and Depth of Cut, Machining Time.
	2nd		**2nd Internal Assessment**
	3rd	9	**Capstan and Turret Lathe**: Introduction
17th	1st		Working Principle and Operation.
	2nd		Revision & Previous year question & Answer discussion
	3rd		Revision & Previous year question & Answer discussion

14/7/25

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