

**LESSON PLAN-4<sup>TH</sup> SEMESTER (2023-2024)**

Subject- Theory of Machine (TH-1)

Name of the Faculty- BISWAJIT PARIDA

MONTH	MODULE/UNIT	COURSE TO BE COVERED	CLASSES REQUIRED	REMARKS (IF ANY)
	<b>Module-1</b>	<b>Simple Mechanism</b>	<b>08</b>	
		Link ,kinematic chain, mechanism, machine	1	
		Inversion, four bar link mechanism and its inversion	2	
		Lower pair and higher pair	2	
		Cam and followers	1	
		Problems	2	
	<b>Module-2</b>	<b>Friction</b>	<b>12</b>	
		Friction between nut and screw for square thread, screw jack	1	
		Bearing and its classification, Description of roller, needle roller& ball bearings	1	
		Torque transmission in flat pivot& conical pivot bearings	2	
		Flat collar bearing of single and multiple types.	1	
		Torque transmission for single and multiple clutches	2	
		Working of simple frictional brakes.	1	
		Working of Absorption type of dynamometer	2	
		Problems	2	
	<b>Module-3</b>	<b>Power Transmission</b>	<b>12</b>	
		Concept of power transmission and Type of drives, belt, gear and chain drive.	1	
		Computation of velocity ratio, length of belts (open and cross)with and without slip.	02	
		Ratio of belt tensions, centrifugal tension and initial tension.	1	
		Power transmitted by the belt.	1	
		Determine belt thickness and width for given permissible stress for open and crossed belt considering centrifugal tension.	1	
		V-belts and V-belts pulleys.	1	
		Concept of crowning of pulleys	1	
		Gear drives and its terminology	1	
		Gear trains, working principle of simple, compound, reverted and epicyclic gear trains.	02	
		Problems	1	
	<b>Module-4</b>	<b>Governors and Flywheel</b>	<b>12</b>	
		Function of governor	1	
		Classification of governor	1	

*M/16/01/24*



	Working of Watt, Porter, Proel and Hartnell governors	4	
	Conceptual explanation of sensitivity, stability and isochronisms.	1	
	Function of flywheel.	1	
	Comparison between flywheel & governor.	1	
	Fluctuation of energy and coefficient of fluctuation of speed.	1	
	Problems	2	
<b>Module-5</b>	<b>Balancing of Machine</b>	<b>8</b>	
	Concept of static and dynamic balancing.	1	
	Static balancing of rotating parts.	2	
	Principles of balancing of reciprocating parts.	2	
	Causes and effect of unbalance.	1	
	Difference between static and dynamic balancing	1	
	Solve simple problems	1	
<b>Module-6</b>	<b>Vibration of Machine Parts</b>	<b>08</b>	
	Introduction to Vibration and related terms (Amplitude, time period and frequency, cycle)	1	
	Classification of vibration.	1	
	Basic concept of natural, forced & damped vibration	1	
	Torsional and Longitudinal vibration	1	
	Causes & remedies of vibration. using Euler's formula (no derivation) in Columns with various end conditions	2	
	Solve simple problems	2	

M2  
16/01/21  
Leet. (Mark)