LESSON PLAN

SUB: THEORY OF MACHINES

BRANCH:- MECHANICAL ENGG.

SEMESTER: 4th

NAME OF FACULTY: ER. DINABANDHU ROUT

GOVERNMENT POLYTECHNIC, BHADRAK

SESSION:2023-24

Hod ,Mechanical 16-01-24

Academic Co-ordinator

Principal 16-01-24
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Discipline: MECHANICAL	Semester: 4 TH	Name of the Teaching Faculty: DINABANDHU ROUT GF (Mechanical)
Subject: TOM	No. of days/per week class allotted: 4	Semester From date: 16.01.2024 To date: 26.04.2024 No of weeks: 15
Week	**Class Day**	**Theory Topics:**
1st	1st	**Simple mechanism** Link ,kinematic chain, mechanism, machine
	2nd	Link ,kinematic chain, mechanism, machine
	3rd	Inversion, four bar link mechanism and its inversion
	4th	Inversion, four bar link mechanism and its inversion
2nd	1st	Lower pair and higher pair
	2nd	Lower pair and higher pair
	3rd	Cam and followers
	4th	Cam and followers
3rd	1st	**Friction** Friction between nut and screw for square thread, screw jack
	2nd	Friction between nut and screw for square thread, screw jack
	3rd	Bearing and its classification, Description of roller, needle roller& ball bearings.
	4th	Bearing and its classification, Description of roller, needle roller& ball bearings.
4th	1st	Bearing and its classification, Description of roller, needle roller& ball bearings.
	2nd	Torque transmission in flat pivot& conical pivot bearings.
	3rd	Torque transmission in flat pivot& conical pivot bearings.
	4th	Flat collar bearing of single and multiple types.
5th	1st	Flat collar bearing of single and multiple types.
	2nd	Torque transmission for single and multiple clutches
	3rd	Torque transmission for single and multiple clutches
	4th	Working of simple frictional brakes
6th	1st	Working of simple frictional brakes
	2nd	Working of Absorption type of dynamometer
	3rd	Class Test

	4th	Power Transmission Concept of power transmission
7th	1st	Type of drives, belt, gear and chain drive.
	2nd	Type of drives, belt, gear and chain drive.
	3rd	Computation of velocity ratio, length of belts (open and cross)with and without slip.
	4th	Computation of velocity ratio, length of belts (open and cross)with and without slip.
8th	1st	Ratio of belt tensions, centrifugal tension and initial tension.
	2nd	Ratio of belt tensions, centrifugal tension and initial tension.
	3rd	Power transmitted by the belt.
	4th	Determine belt thickness and width for given permissible stress for open and crossed belt considering centrifugal tension.
9th	1st	Determine belt thickness and width for given permissible stress for open and crossed belt considering centrifugal tension.
	2nd	V-belts and V-belts pulleys.
	3rd	Concept of crowning of pulleys.
	4th	Gear drives and its terminology.
10th	1st	Gear trains, working principle of simple, compound, reverted and epicyclic gear trains.
	2nd	Governors and Flywheel Function of governor
	3rd	Classification of governor
	4th	Working of Watt, Porter, Proel and Hartnell governors.
11th	1st	Working of Watt, Porter, Proel and Hartnell governors.
	2nd	Conceptual explanation of sensitivity, stability and isochronisms.
	3rd	Function of flywheel.
	4th	Comparison between flywheel &governor.
12th	1st	Fluctuation of energy and coefficient of fluctuation of speed.
	2nd	Balancing of Machine Concept of static and dynamic balancing.
	3rd	Static balancing of rotating parts.
	4th	Principles of balancing of reciprocating parts.
13th	1st	Causes and effect of unbalance.
	2nd	Difference between static and dynamic balancing
	3rd	Vibration of machine parts Introduction to Vibration and related terms (Amplitude, time period and frequency, cycle)

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	4th	Introduction to Vibration and related terms (Amplitude, time period and frequency, cycle)
14th	1st	Classification of vibration.
	2nd	Basic concept of natural, forced & damped vibration
	3rd	Torsional and Longitudinal vibration.
	4th	Causes & remedies of vibration.
15th	1st	Discussion of PYQ
	2nd	Discussion of PYQ
	3rd	Doubt clearing class
	4th	Doubt clearing class

Debabandhu Rout

16.01.24
HOD, Mech.