

LESSON PLAN

SUB: THEORY OF MACHINES

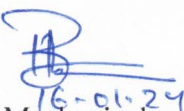
BRANCH:- MECHANICAL ENGG.

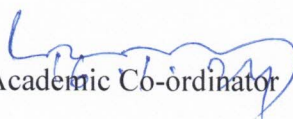
SEMESTER: 4th


NAME OF FACULTY: ER. DINABANDHU ROUT



**GOVERNMENT POLYTECHNIC,
BHADRAK
SESSION:2023-24**


Hod ,Mechanical
16-01-24


Academic Co-ordinator


Principal
Govt. Polytechnic, Bhadrak
16-01-24

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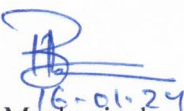
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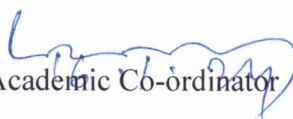
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Discipline: <u>MECHANICAL</u>	Semester: <u>4 TH</u>	Name of the Teaching Faculty: <u>DINABANDHU ROUT</u> <u>GF (Mechanical)</u>
Subject: TOM	No. of days/per week class allotted: 4	Semester From date: 16.01.2024 To date: 26.04.2024 No of weeks: 15
Week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


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

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

Dinobandhu Rout


16.01.24
HOD, Mech.