LESSON PLAN

DEPARTMENT OF MECHANICAL ENGINEERING, ITT, CHOUDWAR

SUBJECT: THEORY OF MACHINES Periods: 4 per week SEMESTER: 4th

NAME OF FACULTY: GURU PRASAD SAHOO, LECT.(MECH) **No. of weeks:** 15

Week	Class Day	Theory / Practical Topics
1st	1st	**Simple mechanism** Link ,kinematic chain, mechanism, machine
	2nd	Inversion, four bar link mechanism and its inversion
	3rd	Lower pair and higher pair
	4th	Lower pair and higher pair
2nd	1st	Cam and followers
	2nd	Cam and followers
	3rd	Friction between nut and screw for square thread, screw jack
	4th	Friction between nut and screw for square thread, screw jack
3rd	1st	Bearing and its classification, Description of roller, needle roller& ball bearings
	2nd	Bearing and its classification, Description of roller, needle roller& ball bearings
	3rd	Torque transmission in flat pivot& conical pivot bearings.
	4th	Torque transmission in flat pivot& conical pivot bearings.
4th	1st	Flat collar bearing of single and multiple types
	2nd	Torque transmission for single and multiple clutches
	3rd	Working of simple frictional brakes.
	4th	Working of simple frictional brakes.
5th	1st	Working of Absorption type of dynamometer
	2nd	Concept of power transmission
	3rd	Type of drives, belt, gear and chain drive.
	4th	Computation of velocity ratio, length of belts (open and cross)with and without slip.
6th	1st	Ratio of belt tensions, centrifugal tension and initial tension
	2nd	Power transmitted by the belt.
	3rd	Determine belt thickness and width for given permissible stress for open and crossed belt considering centrifugal tension.
	4th	Determine belt thickness and width for given permissible stress for open and crossed belt considering centrifugal tension.
7th	1st	V-belts and V-belts pulleys
	2nd	Concept of crowning of pulleys.
	3rd	Concept of crowning of pulleys.
	4th	Gear drives and its terminology.
8th	1st	Gear trains, working principle of simple, compound, reverted and epicyclic gear trains.
	2nd	Function of governor
	3rd	Classification of governor
	4th	Working of Watt, Porter, Proel and Hartnell governors.
9th	1st	Working of Watt, Porter, Proel and Hartnell governors.
	2nd	Conceptual explanation of sensitivity, stability and isochronisms.
	3rd	Conceptual explanation of sensitivity, stability and isochronisms.
	4th	Function of flywheel.

10th	1st	Function of flywheel.
	2nd	Comparison between flywheel &governor.
	3rd	Fluctuation of energy and coefficient of fluctuation of speed.
	4th	Concept of static and dynamic balancing
11th	1st	Concept of static and dynamic balancing
	2nd	Static balancing of rotating parts.
	3rd	Principles of balancing of reciprocating parts.
	4th	Causes and effect of unbalance.
12th	1st	Difference between static and dynamic balancing
	2nd	Difference between static and dynamic balancing
	3rd	Revision
	4th	Introduction to Vibration and related terms (Amplitude, time period and frequency, cycle)
13th	1st	(Amplitude, time period and frequency, cycle)
	2nd	Amplitude, time period and frequency, cycle)
	3rd	Classification of vibration.
	4th	Classification of vibration.
14th	1st	Basic concept of natural, forced & damped vibration
	2nd	Basic concept of natural, forced & damped vibration
	3rd	Torsional and Longitudinal vibration.
	4th	Torsional and Longitudinal vibration.
15th	1st	Causes & remedies of vibration.
	2nd	Causes & remedies of vibration.
	3rd	Revision
	4th	Revision

Sign. of Faculty