

Discipline: <u>MECHANICAL</u>	Semester: <u>4TH</u>	Name of the Teaching Faculty: <u>SRI RAKES KUROUT</u> <u>PTGF(Mechanical)</u>
Subject: <u>TOM</u>	No. of days/per week class allotted: <u>4</u>	Semester From date: 14/02/2023 To date: No of weeks: 15
Week	Class Day	Theory Topics:
1 st	1 st	INTRODUCTION: Simple mechanism Link kinematic chain, mechanism, machine
	2 nd	Inversion, four bar link mechanism and its inversion Lower pair and higher pair
	3 rd	Cam and followers
	4 th	Friction; Friction between nut and screw for square thread, screw jack
2 nd	1 st	Bearing and its classification, Description of roller, needle roller & ball bearings, Torque transmission in flat pivot & conical pivot bearings.
	2 nd	Flat collar bearing of single and multiple types, Torque transmission for single and multiple clutches
	3 rd	Working of simple frictional brakes
	4 th	Working of Absorption type of dynamometer
3 rd	1 st	Power Transmission; Concept of power transmission Type of drives, belt, gear and chain drive
	2 nd	Computation of velocity ratio, length of belts (open and cross) with and without slip. Ratio of belt tensions, centrifugal tension and initial tension.
	3 rd	Power transmitted by the belt. Determine belt thickness and width for given permissible stress for open and crossed belt considering centrifugal tension
	4 th	V-belts and V-belts pulleys. Concept of crowning of pulleys. Gear drives and its terminology
4 th	1 st	Gear trains, working principle of simple, compound, reverted and epicyclic gear trains.
	2 nd	Governors and Flywheel; Function of governor Classification of governor 4.3 Working of Watt, Porter, Proel and Hartnell governors. Conceptual explanation of sensitivity, stability and isochronisms.
	3 rd	Function of flywheel. Comparison between flywheel & governor. Fluctuation of energy and coefficient of fluctuation of speed
	4 th	Balancing of Machine; Concept of static and dynamic balancing. Static balancing of rotating parts. Principles of balancing of reciprocating parts. Causes and effect of unbalance. Difference between static and dynamic balancing
	1 st	Vibration of machine parts; Introduction to Vibration and related terms (Amplitude, time period and frequency, cycle) Classification of vibration.


HOD (Mech)

Rakesh K. Rout (PTGF)