

DEPARTMENT OF MECHANICAL
 LESSON PLAN (2023-24)

Discipline: MECHANICAL	SEMESTER: 4TH	Name of the Teaching faculty: RUTUPARNA SWAIN	
SUBJECT: TOM (TH-1)	No of Days/Week class allotted: 4	Semester starts from Date: 16/01/2024 To 26/04/2023 No of weeks: 15	
1st	1st	CH - 1.0	Simple mechanism
		Link and types of link, Pair and types of pair	
	2nd	Joints and types of joints, Relation between link, joint and Kinematic Chain.	
	3rd	Mechanism, Machine, Structure, Difference between machine and structure.	
2nd	4th	Inversion and Four bar chain mechanism and its inversion	
	1st	Slider crank chain, mechanism and its inversion	
	2nd	Lower and higher pair, Cam and Follower	
	3rd	Review class	
3rd	4th	<i>Assignment Evaluation & Class Test</i>	
		CHAPTER 2.0	Friction
	1st	Revision of friction (Force of friction, coefficient of friction, limiting friction, angle of friction, angle of repose, friction on horizontal plane and inclined plane)	
	2nd	Screw Jack: Terminology, Friction between nut and screw for screw jack. Torque required to raise or lower the load	
4th	3rd	Efficiency of screw jack, Numerical	
	4th	Bearing, Function of bearing, Classification, Ball, roller and needle roller bearing	
	1st	Torque transmission in flat collar bearing, Simple Problems	
	2nd	Torque transmission in flat pivot bearing, Simple Problems	
5th	3rd	Torque transmission in conical pivot bearing, Numerical	
	4th	Clutch, Classification, Single and multiple clutch, Working of single plate clutch	
	1st	Torque transmission in Single and multiple clutch, Simple Problems	
	2nd	Working of simple frictional brakes	
6th	3rd	Working of absorption type dynamometer	
	4th	Review class	
	1st	<i>Assignment Evaluation & Class Test</i>	
	2nd	CHAPTER 3.0	Power Transmission
7th		Concept of power transmission, types of drives – belt, chain, rope and gear drives.	
	3rd	Types of belt drive, Pulley and types of pulley	
	4th	Velocity ratio of belt drive, Length of open and crossed belt drive	
8th	1st	Numerical Discussion	
	2nd	Ratio of tension, Power transmission in belt, Numerical	
	3rd	Initial tension in belt, Centrifugal tension, Determination of belt thickness and width for	
	4th	Numerical Discussion	
9th	1st	V-belt and V-belt pulley, Crowning of pulley, Gear drives and its terminology	
	2nd	Working principle of simple, compound gear trains	

	3rd	Working principle of reverted and epicyclic gear trains
	4th	Review class
9th	1st	<i>Assignment Evaluation & Class Test</i>
	2nd	CHAPTER 4.0 Governors and Flywheel Function of governor, Classification of governor, Working of centrifugal governor
	3rd	Working of Watt and Porter Governor
	4th	Working of Proell and Hartnell governor
10th	1st	Sensitiveness and Stability of governor, isochronous governor
	2nd	Numerical Discussion
	3rd	Flywheel: Function of flywheel, difference between flywheel and governor
	4th	Fluctuation of energy, coefficient of fluctuation of energy, coefficient of fluctuation of speed
11th	1st	Numerical Discussion
	2nd	Review class
	3rd	<i>Assignment Evaluation & Class Test</i>
	4th	CHAPTER 5.0 Balancing of Machine Concept of static and dynamic balancing
12th	1st	Principle of Balancing of reciprocating masses
	2nd	Static Balancing of rotating masses
	3rd	Static Balancing of rotating masses: Continue
	4th	Causes and effects of unbalance
13th	1st	Numerical Discussion
	2nd	Review class
	3rd	<i>Assignment Evaluation & Class Test</i>
	4th	CHAPTER 6.0 Vibration of Machine Parts Introduction to vibration and the terms Amplitude, time period, frequency and cycle
14th	1st	Classification of vibration, Concept of natural, forced and damped vibration
	2nd	Longitudinal and Transverse vibration
	3rd	Torsional Vibration
	4th	Causes and remedies of vibration
15th	1st	Review class
	2nd	<i>Assignment Evaluation & Class Test</i>
	3rd	<i>Discussion on Previous year question paper</i>
	4th	<i>Discussion on Previous year question paper</i>


 Signature of Faculty

Sl No.	Name of the Book	Author Name	Publisher
1.	Text Book of Theory of Machine	R.S Khurmi	S.Chand
2.	Text Book of Theory of Machine	R.K. Rajput	S.Chand
3.	Text Book of Theory of Machine	P.L. Ballary	Dhanpat Rai
4.	Text Book of Theory of Machine	Thomas Bevan	Pearson