GOVERNMENT POLYTECHNIC JAJPUR
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DEPARTMENT OF MECHANICAL

LESSON PLAN (2023-24)

Discipline: MECHANICAL	SEMESTER: 4TH	Name of the Teaching faculty: JAYADEB DASH
SUBJECT: TOM (TH-1)	No of Days/Week class alloted: 4	Semester starts from Date: 04.02.2025 To 17.05.2025 No of weeks: 15
1st	1st	**CH - 1.0 Simple mechanism**
		Define Link and types of link, Pair and types of pair.
	2nd	Joints and types of joints. Relation between link, joint and Kinematic Chain.
	3rd	Discussion on Mechanism, Machine, Structure, Difference between machine and
	4th	Inversion and Four bar chain mechanism and its inversion
2nd	1st	Slider crank chain mechanism and its inversion
	2nd	Discussion on Lower and higher pair, Cam and Follower
	3rd	Review class
	4th	*Assignment Evaluation & Class Test*
3rd	1st	**CHAPTER 2.0 Friction**
		Revision on 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
	3rd	Efficiency of screw jack. Numerical
	4th	Bearing: Function of bearing, Classification, Ball, roller and needle roller bearing
4th	1st	Torque transmission in flat collar bearing, Simple Problems
	2nd	Torque transmission in flat pivot bearing, Simple Problems
	3rd	Torque transmission in conical pivot bearing, Numerical
	4th	Clutch, Classification, Single and multiple clutch, Working of single plate clutch
5th	1st	Torque transmission in Single and multiple clutch, Simple Problems
	2nd	Working of simple frictional brakes
	3rd	Working of absorption type dynamometer
	4th	Review class
6th	1st	*Assignment Evaluation & Class Test*
	2nd	**CHAPTER 3.0 Power Transmission**
		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
7th	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
8th	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	*Assignment Evaluation & Class Test*
	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 Proel 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	*Assignment Evaluation & Class Test*
	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	*Assignment Evaluation & Class Test*
	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	*Assignment Evaluation & Class Test*
	3rd	*Discussion on Previous year question paper*
	4th	*Discussion on Previous year question paper*

Signature of Faculty
(Jayadeb Dash)

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.Ballany	Dhanpat Rai
4	Text Book of Theory of Machine	Thomas Bevan	Pearson