NILASAILA INSTITUTE OF SCIENCE & TECHNOLOGY
SERGARH-756060, BALASORE (ODISHA)
(Approved by AICTE& affiliated to SCTE&VT, Odisha)

LESSON PLAN

SUBJECT : Th-1 (THEORY OF MACHINE)

CHAPTER WISE DISTRIBUTION OF PERIODS

Sl.No.	Name of the chapter as per the Syllabus	No. of Periods as per the Syllabus	No. of periods actually needed
1	Simple Mechanism	8	9
2	Friction	12	14
3	Power Transmission	12	14
4	Governors and Flywheel	12	14
5	Balancing of Machine	8	10
6	Vibration of machine parts	8	10
	Total Period:	60	71

Discipline: AUTOMOBILE ENGINEERING	Semester: 4th	**Name of the Teaching Faculty:** Er. Nihar Ranjan Sahoo
		SESSION : 2023-24 **EXAMINATION :** 2024 (S)
Week	**Class Day**	**Theory Topics**
1st	1st	Introduction to THEORY OF MACHINE.
	2nd	**1.0 Simple mechanism** 1.1 Link, kinematic chain, mechanism, machine
	3rd	1.2 Inversion, four bar link mechanism and its inversion
	4th	1.2 Inversion, four bar link mechanism and its inversion
	5th	1.2 Inversion, four bar link mechanism and its inversion
2nd	1st	1.2 Inversion, four bar link mechanism and its inversion
	2nd	1.2 Inversion, four bar link mechanism and its inversion
	3rd	1.2 Inversion, four bar link mechanism and its inversion
	4th	1.3 Lower pair and higher pair
	5th	1.4 Cam and followers
3rd	1st	**2.0 Friction** 2.1 Friction between nut and screw for square thread, screw jack
	2nd	2.1 Friction between nut and screw for square thread, screw jack
	3rd	2.2 Bearing and its classification, Description of roller, needle roller & ball bearings.
	4th	2.2 Bearing and its classification, Description of roller, needle roller & ball bearings.
	5th	2.3 Torque transmission in flat pivot & conical pivot bearings.
4th	1st	2.3 Torque transmission in flat pivot & conical pivot bearings.
	2nd	2.3 Torque transmission in flat pivot & conical pivot bearings.
	3rd	2.4 Flat collar bearing of single and multiple types.
	4th	2.4 Flat collar bearing of single and multiple types.
	5th	2.5 Torque transmission for single and multiple clutches
5th	1st	2.5 Torque transmission for single and multiple clutches
	2nd	2.5 Torque transmission for single and multiple clutches
	3rd	2.6 Working of simple frictional brakes.
	4th	2.7 Working of Absorption type of dynamometer
	5th	**3.0 Power Transmission** 3.1 Concept of power transmission

6th	1st	3.2 Type of drives, belt, gear and chain drive.
	2nd	3.3 Computation of velocity ratio, length of belts (open&cross) with and without slip.
	3rd	3.3 Computation of velocity ratio, length of belts (open&cross) with and without slip.
	4th	3.4 Ratio of belt tensions, centrifugal tension and initial tension.
	5th	3.5 Power transmitted by the belt.
7th	1st	3.6 Determine belt thickness and width for given permissible stress for open and crossed belt considering centrifugal tension
	2nd	3.7 V-belts and V-belts pulleys.
	3rd	3.8 Concept of crowning of pulleys.
	4th	3.9 Gear drives and its terminology.
	5th	3.10 Gear trains, Working principle of simple, compound, reverted and epicyclic gear trains.
8th	1st	3.10 Gear trains, Working principle of simple, compound, reverted and epicyclic gear trains.
	2nd	3.10 Gear trains, Working principle of simple, compound, reverted and epicyclic gear trains.
	3rd	3.10 Gear trains, Working principle of simple, compound, reverted and epicyclic gear trains.
	4th	**4.0 Governors and Flywheel** 4.1 Function of governor
	5th	4.2 Classification of governor
9th	1st	4.3 Working of Watt, Porter, Proel and Hartnel l governors.
	2nd	4.3 Working of Watt, Porter, Proel and Hartnel l governors.
	3rd	4.3 Working of Watt, Porter, Proel and Hartnel l governors.
	4th	4.3 Working of Watt, Porter, Proel and Hartnel l governors.
	5th	4.3 Working of Watt, Porter, Proel and Hartnel l governors.
10th	1st	4.3 Working of Watt, Porter, Proel and Hartnel l governors.
	2nd	4.4 Conceptual explanation of sensitivity, stability and isochronism
	3rd	4.4 Conceptual explanation of sensitivity, stability and isochronism
	4th	4.5 Function of flywheel.
	5th	4.6 Comparison between flywheel & governor.
11th	1st	4.7 Fluctuation of energy and coefficient of fluctuation of speed.
	2nd	4.7 Fluctuation of energy and coefficient of fluctuation of speed.

11th	**3rd**	**5.0 Balancing of Machine** 5.1 Concept of static and dynamic balancing.
	4th	5.2 Static balancing of rotating parts.
	5th	5.2 Static balancing of rotating parts.
12th	**1st**	**INTERNAL ASSESMENT.**
	2nd	**INTERNAL ASSESMENT.**
	3rd	5.2 Static balancing of rotating parts.
	4th	5.3 Principles of balancing of reciprocating parts.
	5th	5.3 Principles of balancing of reciprocating parts.
13th	**1st**	5.3 Principles of balancing of reciprocating parts.
	2nd	5.4 Causes and effect of unbalance.
	3rd	5.4 Causes and effect of unbalance.
	4th	5.5 Difference between static and dynamic balancing
	5th	**6.0 Vibration of machine parts** 6.1 Introduction to Vibration and related terms (Amplitude, time period and
14th	**1st**	6.2 Classification of vibration.
	2nd	6.2 Classification of vibration.
	3rd	6.3 Basic concept of natural, forced & damped vibration
	4th	6.3 Basic concept of natural, forced & damped vibration
	5th	6.3 Basic concept of natural, forced & damped vibration
15th	**1st**	6.4 Torsional and Longitudinal vibration.
	2nd	6.4 Torsional and Longitudinal vibration.
	3rd	6.4 Torsional and Longitudinal vibration.
	4th	6.5 Causes & remedies of vibration.
	5th	REVISION