



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	13
3	Power Transmission	12	13
4	Governors and Flywheel	12	13
5	Balancing of Machine	8	9
6	Vibration of machine parts	8	9
	Total Period:	60	66

Discipline: MECHANICAL ENGINEERING	Semester: 4th	Name of the Teaching Faculty: Er. Nihar Ranjan Sahoo
Week	Class Day	Theory / Practical Topics
1 st	1 st	Introduction to THEORY OF MACHINE.
	2 nd	1.0 Simple mechanism 1.1 Link, kinematic chain, mechanism, machine
	3 rd	1.2 Inversion, four bar link mechanism and its inversion
	4 th	1.2 Inversion, four bar link mechanism and its inversion
	5 th	1.2 Inversion, four bar link mechanism and its inversion
2 nd	1 st	1.2 Inversion, four bar link mechanism and its inversion
	2 nd	1.2 Inversion, four bar link mechanism and its inversion
	3 rd	1.2 Inversion, four bar link mechanism and its inversion
	4 th	1.3 Lower pair and higher pair
	5 th	1.4 Cam and followers
3 rd	1 st	2.0 Friction 2.1 Friction between nut and screw for square thread, screw jack
	2 nd	2.1 Friction between nut and screw for square thread, screw jack
	3 rd	2.2 Bearing and its classification, Description of roller, needle roller & ball bearings.
	4 th	2.2 Bearing and its classification, Description of roller, needle roller & ball bearings.
	5 th	2.3 Torque transmission in flat pivot & conical pivot bearings.
4 th	1 st	2.3 Torque transmission in flat pivot & conical pivot bearings.
	2 nd	2.3 Torque transmission in flat pivot & conical pivot bearings.

4 th	3 rd	2.4 Flat collar bearing of single and multiple types.
	4 th	2.4 Flat collar bearing of single and multiple types.
	5 th	2.5 Torque transmission for single and multiple clutches
5 th	1 st	2.5 Torque transmission for single and multiple clutches
	2 nd	2.6 Working of simple frictional brakes.
	3 rd	2.7 Working of Absorption type of dynamometer
	4 th	3.0 Power Transmission 3.1 Concept of power transmission
	5 th	3.2 Type of drives, belt, gear and chain drive.
6 th	1 st	3.3 Computation of velocity ratio, length of belts (open&cross) with and without slip.
	2 nd	3.3 Computation of velocity ratio, length of belts (open&cross) with and without slip.
	3 rd	3.4 Ratio of belt tensions, centrifugal tension and initial tension.
	4 th	3.5 Power transmitted by the belt.
	5 th	3.6 Determine belt thickness and width for given permissible stress for open and crossed belt considering centrifugal tension
7 th	1 st	3.7 V-belts and V-belts pulleys.
	2 nd	3.8 Concept of crowning of pulleys.
	3 rd	3.9 Gear drives and its terminology.
	4 th	3.10 Gear trains, Working principle of simple, compound, reverted and epicyclic gear trains.
	5 th	3.10 Gear trains, Working principle of simple, compound, reverted and epicyclic gear trains.
8 th	1 st	3.10 Gear trains, Working principle of simple, compound, reverted and epicyclic gear trains.

8 th	2 nd	INTERNAL ASSESMENT.
	3 rd	INTERNAL ASSESMENT.
	4 th	4.0 Governors and Flywheel 4.1 Function of governor
	5 th	4.2 Classification of governor
9 th	1 st	4.3 Working of Watt, Porter, Proel and Hartnel I governors.
	2 nd	4.3 Working of Watt, Porter, Proel and Hartnel I governors.
	3 rd	4.3 Working of Watt, Porter, Proel and Hartnel I governors.
	4 th	4.3 Working of Watt, Porter, Proel and Hartnel I governors.
	5 th	4.3 Working of Watt, Porter, Proel and Hartnel I governors.
10 th	1 st	4.4 Conceptual explanation of sensitivity, stability and isochronism
	2 nd	4.4 Conceptual explanation of sensitivity, stability and isochronism
	3 rd	4.5 Function of flywheel.
	4 th	4.6 Comparison between flywheel & governor.
	5 th	4.7 Fluctuation of energy and coefficient of fluctuation of speed.
11 th	1 st	4.7 Fluctuation of energy and coefficient of fluctuation of speed.
	2 nd	5.0 Balancing of Machine 5.1 Concept of static and dynamic balancing.
	3 rd	5.2 Static balancing of rotating parts.
	4 th	5.2 Static balancing of rotating parts.
	5 th	5.2 Static balancing of rotating parts.

12 th	1 st	5.3 Principles of balancing of reciprocating parts.
	2 nd	5.3 Principles of balancing of reciprocating parts.
	3 rd	5.4 Causes and effect of unbalance.
	4 th	5.4 Causes and effect of unbalance.
	5 th	5.5 Difference between static and dynamic balancing
13 th	1 st	6.0 Vibration of machine parts 6.1 Introduction to Vibration and related terms (Amplitude, time period and frequency, cycle)
	2 nd	6.2 Classification of vibration.
	3 rd	6.2 Classification of vibration.
	4 th	6.3 Basic concept of natural, forced & damped vibration
	5 th	6.3 Basic concept of natural, forced & damped vibration
14 th	1 st	6.3 Basic concept of natural, forced & damped vibration
	2 nd	6.4 Torsional and Longitudinal vibration.
	3 rd	6.4 Torsional and Longitudinal vibration.
	4 th	6.5 Causes & remedies of vibration.
	5 th	REVISION

