

SYNERGY SCHOOL OF ENGINEERING, DHENKANAL



Name of the Faculty: SOMANATH SETHIV
 Discipline : Mechanical Engineering
 Semester : 4th Summer-2026
 Subject: Theory of Machines (TOM)-TH1
 Starting Date : 22/12/25
 End Date : 18/04/26

Lesson Plan

Week	Theory	
	Lecture Day	Topic (Including assessment/test)
1 st	1 st	Subject introduction and overview
	2 nd	Simple Mechanisms: Kinematics of Machines: - Definition of Kinematics, Dynamics, Statics, Kinetics
	3 rd	Kinematic link Kinematic Pair and its types. Constrained motion and its types, Kinematic chain and its types
2 nd	1 st	Mechanism, inversion, machine and structure.
	2 nd	Inversions of Kinematic Chain: Inversion of four bar chain, coupled wheels of Locomotive & Pantograph.
	3 rd	Inversion of Double Slider Crank Chain- Scotch Yoke Mechanism & Oldham's Coupling.
3 rd	1 st	Power Transmission: Introduction to Belt and Rope drives. Types of belt drives.
	2 nd	Concept of velocity ratio, slip and creep; crowning of pulleys (simple numerical)
	3 rd	Flat and V belt drive: Ratio of driving tensions, power transmitted, centrifugal tension, and condition for maximum horse power (simple numerical) Different types of chains and their terminology
4 th	1 st	Gear Drive - Simple, compound, reverted and epicyclic gear trains (simple numerical)
	2 nd	Relative advantages and disadvantages of various drives.
	3 rd	Simple numerical.
5 th	1 st	Flywheel: Principle and applications of flywheel.
	2 nd	Turning - moment diagram of flywheel for different engines.
	3 rd	Fluctuation of speed and fluctuation of energy - Concept only.
6 th	1 st	Introduction of Fluctuation of energy.
	2 nd	Coefficient of fluctuation of speed and coefficient of fluctuation of energy.
	3 rd	Simple numerical
7 th	1 st	Governor: Function of a governor, comparison of flywheel and governor.
	2 nd	Simple description and working of Watt and Porter governor
	3 rd	Simple description and working of Hartel governor. Simple numerical based on watt and porter governor.
8 th	1 st	Simple numerical based on watt and porter governor

	2 nd	Terminology used in governors: Height, equilibrium speed, Hunting, isochronism's
	3 rd	Stability, sensitiveness of a governor.
9 th	1 st	CLASS TEST-I
	2 nd	Terminology of cam profile.
	3 rd	Description of different types of cams and followers with simple line diagram
10 th	1 st	Displacement diagram for uniform velocity.
	2 nd	Displacement diagram for S.H.M.
	3 rd	Displacement diagram for uniform acceleration and deceleration.

11 th	1 st	Concept of static and dynamic balancing <i>Balancing</i> : Need of balancing
	2 nd	Introduction to balancing of rotating masses in the same plane
	3 rd	Different Planes (simple numerical) .Introduction to balancing of rotating masses in the same plane.
12 th	1 st	Simple Numerical
	2 nd	Different Planes (simple numerical)
	3 rd	Vibrations: Causes of vibrations. Machines Their harmful effects and remedies.
13 th	1 st	Types-longitudinal, transverse
	2 nd	Torsional vibrations.
	3 rd	Damping of vibrations. Simple Numerical
14 th	1 st	Classification of Vibration
	2 nd	Difference Between Torsional and Longitudinal Vibration
	3 rd	Basic Concepts Of Natural, Forced and Dammed Vibration
15 th	1 st	Cause And Remedies Of Vibration
	2 nd	Revision.
	3 rd	CLASS TEST-II

20/12/24
 Verified by HOD
 MECHANICAL ENGG. DEPT.
 SSE, Dhenkanal

20/12/24
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