

SYNERGY SCHOOL OF ENGINEERING, DHENKANAL

Name of the Faculty: Mr.SOMANATH SETHY
 Discipline : Mechanical Engineering
 Semester : 4th Summer-2024
 Subject : Theory of Machines (TOM)-THI
 Starting Date : 16/01/24
 End Date : 26/04/24



Lesson Plan

Week	Theory		Date Of Delivery
	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	
	4 th	Constrained motion and its types, Kinematic chain and its types	
2 nd	1 st	Mechanism, inversion, machine and structure.	
	2 nd	Inversion of Kinematic Chain: Inversion of four bar chain, coupled wheels of Locomotive & Pantograph.	
	3 rd	Inversion of Single Slider Crank chain - Rotary I.C. Engines mechanism, Crank and Slotted lever quick return mechanism.	
	4 th	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 horsepower (simple numerical)	
	4 th	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	
	4 th	Simple numerical	

5 th	1 st	Flywheel:	
		Principle and application of flywheel	
	2 nd	Turning-moment diagram of flywheel for different engines.	
	3 rd	Fluctuation of speed and fluctuation of energy- Concept only.	
	4 th	1st sessional test (Tentative)	
6 th	1 st	Assessment	
	2 nd	Coefficient of fluctuation of speed and coefficient of fluctuation of energy.	
	3 rd	Simple numerical	
	4 th	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	
	4 th	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, sensitivity of a governor.	
	4 th	2nd sessional test (Tentative)	
9 th	1 st	Assessment	
	2 nd	Cams:	
		Definition and function of cam	
	3 rd	Description of different types of cams and followers with simple line diagram.	
	4 th	Terminology of cam profile.	
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.	
	4 th	Balancing:	
		Need of balancing	
11 th	1 st	Concept of static and dynamic balancing	

	2 nd	Introduction to balancing of rotating masses in the same plane	
	3 rd	Different Planes (simple numerical)	
	4 th	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	
	4 th	Machines Their harmful effects and remedies	
13 th	1 st	Types-longitudinal, transverse	
	2 nd	Torsional vibrations.	
	3 rd	Simple Numerical	
	4 th	Damping of vibrations	
14 th	1 st	Classification of Vibration	
	2 nd	Difference Between Torsional and Longitudinal Vibration	
	3 rd	Basic Concepts Of Natural, Forced and Damped Vibration	
	4 th	Cause And Remedies Of Vibration	
15 th	1 st	Assessment	
	2 nd	3rd sessional test (Tentative)	
	3 rd	Revision	
	4 th	Revision	

Verified by HOD

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Lect. In Mechanical Engg.