4TH SEM 10.03.2022 -10.06.2022 (SUMMER)

LESSON PLAN OF

THEORY OF MACHINE

ER. KULADEEP MOHAPATRA

(LECTURER IN AUTOMOBILE ENGG.)

B.O.S.E.,CUTTACK

AUTOMOBILE ENGINEERING DEPATMENT

VISSION:

To develop competent, disciplined imaginative Automobile engineers, equipped with core competency and technical skills useful to the learning / teaching community and the industrial fraternity.

MISSION:

M1: To provide with operational and technical inputs to get innovative and research ideas in the field of automotive engineering.

M2: To give inputs for higher education with management qualities for the betterment of the society.

M3: Skilling with modern engineering tools necessary to meet and solve engineering problems.

PROGRAM EDUCATIONAL OBJECTIVES

PEO1: To provide technical skills to diagnose and apply the concept of automotive system

PEO2: To prepare to design, fabricate and innovate in automobile sector to face the industrial challenges.

PEO3: To inculcate with good communication skills, ethics and entrepreneurship skills to play the key role in automotive industry.

Discipline:-**Automobile Engg.**	Semester :- **4TH**	Name of the teaching faculty :- **KULADEEP MOHAPATRA**
Subject Name :- **THERMAL ENGINEERING**	No. Of Days/Week Class Allotted :- **04 Periods/Week (Monday ,Tuesday , Wednesday , Friday – 1 Period Each)**	Semester from Date - **10/03/2022** To Date - **10/06/2022** **No. of Weeks: 14**
Week	**Class Day**	**Theory topics**
1st	**10.03.2022**	Introduction of Theory of machine. **1. Simple mechanism** 1.1 Link, kinematic chain, mechanism, machine
2nd	**14.03.2022**	1.2 Inversion, four bar link mechanism and its inversion
	15.03.2022	1.2 Inversion of four bar link mechanism
	16.03.2022	1.2 Inversion of four bar link mechanism
3rd	**21.03.2022**	1.2 Inversion of four bar link mechanism
	22.03.2022	1.3 Lower pair and higher pair
	23.03.2022	1.4 Cam and followers
	25.03.2022	**CLASS TEST**
4th	**28.03.2022**	**2. Friction** 2.1 Friction between nut and screw for square thread, screw jack
	29.03.2022	2.2 Bearing and its classification, Description of roller, needle roller & ball bearings.
	30.03.2022	2.3 Torque transmission in flat pivot & conical pivot bearings.
5th	**04.04.2022**	2.4 Flat collar bearing of single and multiple types.
	05.04.2022	2.5 Torque transmission for single and multiple clutches
	06.04.2022	2.6 Working of simple frictional brakes. 2.7 Working of Absorption type of dynamometer.
	08.04.2022	**QUIZ TEST**
6th	**11.04.2022**	**3. Power Transmission** 3.1 Concept of power transmission 3.2 Type of drives, belt, gear and chain drive.

	12.04.2022	3.2 Computation of velocity ratio, length of belts (open & cross) with and without slip.
	13.04.2022	3.4 Ratio of belt tensions, centrifugal tension and initial tension. 3.5 Power transmitted by the belt.
7th	**18.04.2022**	3.6 Determine belt thickness and width for given permissible stress for open and crossedbelt considering centrifugal tension.
	19.04.2022	3.5 V-belts and V-belts pulleys. 3.6 Concept of crowning of pulleys. 3.9 Gear drives and its terminology.
	20.04.2022	3.10 Gear trains, working principle of simple, compound, reverted and epicyclic gear trains.
	22.04.2022	**CLASS TEST/INTERNAL**
8th	**25.04.2022**	**4. Governors and Flywheel** 4.1 Function of governor 4.2 Classification of governor
	26.04.2022	4.3 Working of Watt governor
	27.04.2022	4.3 Working of Porter governor
	29.04.2022	4.3 Working of Proel governor
9th	**02.05.2022**	4.3 Working of Hartnell governors.
	04.05.2022	4.4 Conceptual explanation of sensitivity, stability and isochronisms. 4.5 Function of flywheel.
	06.05.2022	4.6 Comparison between flywheel & governor.
10th	**09.05.2022**	4.7 Fluctuation of energy and coefficient of fluctuation of speed.
	10.05.2022	**QUIZ TEST**
	11.05.2022	**5. Balancing of Machine** 5.1 Concept of static and dynamic balancing. 5.1 Static balancing of rotating parts.
	13.05.2022	5.3 Principles of balancing of reciprocating parts.
11th	**17.05.2022**	5.4 Causes and effect of unbalance.
	18.05.2022	5.5 Difference between static and dynamic balancing.
	20.05.2022	**CLASS TEST**
12th	**23.05.2022**	**6. Vibration of machine parts** 6.1 Introduction to Vibration and related terms (Amplitude, time period andfrequency, cycle)

	24.05.2022	6.2 Classification of vibration.
	25.05.2022	6.3 Basic concept of natural, forced & damped vibration
	27.05.2022	6.4 Torsional and Longitudinal vibration
13th	**31.05.2022**	6.5 Causes & remedies of vibration.
	01.6.2022	**MOCK TEST -1**
	03.6.2022	**REVISION AND QUESTION DISCUSSION**
14th	**06.6.2022**	**MOCK TEST -2**
	07.6.2022	**REVISION AND QUESTION DISCUSSION**
	08.6.2022	**MOCK TEST -3**
	10.6.2022	**REVISION AND QUESTION DISCUSSION**