

Academic Lesson Plan for theory of machine(Summer-2024)		
Discipline: Mechanical Engineering	Semester: 4th	Name of Faculty: Subhasini Muduli
Subject: theory of machine	No. of days/per week Class Allotted: 4	Semester from: 16/01/2024
		No. of weeks:15
Week	Class Day	Theory Topics
1st	1st	1.0 Simple mechanism 1.1 Link, kinematic chain
	2nd	1.1 Mechanism, machine, explanation
	3rd	1.2 Inversion explanation.
	4th	1.2 Four bar link mechanism and its inversion cont....
2nd	1st	1.2 Four bar link mechanism and its inversion cont....
	2nd	1.3 Lower pair and higher pair
	3rd	1.4 Cam and followers
	4th	above all problem solving
	1st	2.0 Friction 2.1 Friction between nut and screw.
	2nd	2.1 Friction for square thread, screw jack.

3rd	3rd	2.2 Bearing and its classification,
	4th	2.2 Description of roller, needle roller& ball bearings
4th	1st	2.2 Problem solving
	2nd	2.3 Torque transmission in flat pivot bearing.
	3rd	2.3 Torque transmission in conical pivot bearings.
	4th	2.4 Flat collar bearing of single and multiple types.
5th	1st	2.5 Torque transmission for single and multiple clutches
	2nd	2.6 Working of simple frictional brakes.
	3rd	2.6 Working of simple frictional brakes.
	4th	2.0 solving all regards problem.
6th	1st	3.0 Power Transmission 3.1 Concept of power transmission.
	2nd	3.2 Type of drives, belt, gear and chain drive.
	3rd	3.3 Computation of velocity ratio, length of belts (open and cross)with and without slip.
	4th	3.4 Ratio of belt tensions, centrifugal tension and initial tension
7th	1st	3.5 Power transmitted by the belt.
	2nd	3.6 Determine belt thickness and width for given permissible stress for open and crossed belt
	3rd	solving problems of chapter 3.0.

	4th	3.7 V-belts and V-belts pulleys
8th	1st	3.8 Concept of crowning of pulleys.
	2nd	3.9 Gear drives and its terminology.
	3rd	3.10 Gear trains, working principle of simple, compound, reverted and epicyclic gear trains.
	4th	solving problems of chapter 3.0.
9th	1st	4.0 Governors and Flywheel 4.1 Function of governor.
	2nd	4.2 Classification of governor
	3rd	4.3 Working of Watt governors & derivation.
	4th	4.3 Working of Porter, Proel governors & dervation
10th	1st	4.3 Working of Hartnell governors.
	2nd	4.4 Conceptual explanation of sensitivity, stability and isochronisms. Cont....
	3rd	4.4 Conceptual explanation of sensitivity, stability and isochronisms.
	4th	problem solving chapter 4.0
11th	1st	4.5 Function of flywheel.
	2nd	4.6 Comparison between flywheel & governor.
	3rd	4.7 Fluctuation of energy and coefficient of fluctuation of speed.
	4th	Problem solving chapter 4.0
	1st	5.0 Balancing of Machine 5.1 Concept of static and dynamic balancing.

12th	2nd	5.2 Static balancing of rotating parts.cont...
	3rd	5.2 Static balancing of rotating part.
	4th	5.3 Principles of balancing of reciprocating parts.cont.....
13th	1st	5.3 Principles of balancing of reciprocating parts.
	2nd	5.4 Causes and effect of unbalance.
	3rd	5.5 Difference between static and dynamic balancing
	4th	Problem solving chapter 5.0
14th	1st	6.0 Vibration of machine parts 6.1 Introduction to Vibration and related terms (Amplitude, time period and frequency,
	2nd	6.1 Introduction to Vibration and related terms (Amplitude, time period and frequency, cycle).
	3rd	6.2 Classification of vibration.
	4th	6.3 Basic concept of natural, forced & damped vibration.cont....
15th	1st	6.3 Basic concept of natural, forced & damped vibration.
	2nd	6.4 Torsional and Longitudinal vibration.
	3rd	6.5 Causes & remedies of vibration.
	4th	Problem solving chapter 6.0

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Academic Lesson Plan for AUTOMOBILE ENGINEERING (Summer-2024)		
Discipline: Mechanical Engineering	Semester: 6th	Name of Faculty: Subhasini Muduli
Subject: AUTOMOBILE ENGINEERING	No. of days/per week Class Allotted: 4	Semester from: 16/01/2024
		No. of weeks: 15
Week	Class Day	Theory Topics
1st	1st	Introduction: Automobiles: Definition, need and classification
	2nd	Layout of automobile chassis with major components (Line diagram)
	3rd	Manufacturer's specification of auto engines of Motorcycle, scooter, car & bus one from each.
	4th	State the classification of engines basing on working principle,
2nd	1st	Fuel used position of cylinder, arrangement of cylinder.
	2nd	Transmission system: Clutch System: Need, Types
	3rd	Single plate clutch Working principle with
	4th	Multi plate clutch Working principle with
3rd	1st	Gear Box: Purpose of gear box
	2nd	Construction and working of a 4 speed gear box
	3rd	Concept of automatic gear changing mechanisms
	4th	Propeller shaft: Constructional features
4th	1st	Propeller shaft: Constructional features
	2nd	Differential: Need, Types
	3rd	Differential Working principle
	4th	Braking system: Braking systems in automobiles:
5th	1st	Need and types.
	2nd	Mechanical Brake
	3rd	Hydraulic brake

	4th	Air brake
6th	1st	Air assisted hydraulic brake
	2nd	Vacuum Brake
	3rd	Describe the Battery ignition
	4th	Describe the Battery ignition
7th	1st	Describe Magnet ignition system.
	2nd	Describe Multipoint fuel injection system.
	3rd	Describe Multipoint fuel injection system.
	4th	For Diesel engine:
8th	1st	For Diesel engine:
	2nd	Describe the working principle of Fuel feed pump,
	3rd	Describe the working principle of Fuel feed pump,
	4th	Describe the working principle Injector and Fuel filter.
9th	1st	Describe the working principle of fuel injection system for multi cylinder
	2nd	Describe the working principle of fuel injection system for multi cylinder engine
	3rd	Describe the working principle of fuel injection system for multi cylinder
	4th	Auto electric system: Wiring diagram of Horn circuit,
10th	1st	Lighting circuit, Cut-out circuit
	2nd	Lighting circuit, Cut-out circuit
	3rd	Voltage current regulator circuit and Flasher circuit (Sketch and description)
	4th	State the common ignition troubles
11th	1st	State the common ignition , its remedies
	2nd	Spark plugs: Purpose,
	3rd	Spark plugs: construction
	4th	Spark plugs: specifications
12th	1st	Suspension System: Description of the conventional suspension system for Rear and Front axle.
	2nd	Description of independent suspension system used in cars (coil spring and

	3rd	Constructional features and working of a telescopic shock absorber
	4th	State tyre specifications.
13th	1st	Explain the causes and remedies of tyre wear.
	2nd	Cooling and Lubrication: Describe necessity of engine cooling.
	3rd	Describe defects of cooling
	4th	their remedial measures.
14th	1st	their remedial measures.
	2nd	Describe the Function of lubrication.
	3rd	Describe the lubrication System of I.C. engine.
	4th	Describe the lubrication System of I.C. engine.
15th	1st	Describe the lubrication System of I.C. engine.
	2nd	Fuel and Ignition system: For petrol Engine:
	3rd	Describe carburetion and Air fuel ratio.
	4th	Describe carburetion and Air fuel ratio.

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