Lesson Plan

Subject: **ENGINEERING MECHANICS** (Th -4) Name of faculty: Satyabrata Khilar

Semester: 2nd Class allotted:4p/week Branch: ELECTRICAL Session: 2024(S)

Discipline	Semester	From date: To date:	Teaching Aid
Subject:	No. of days/ per week	Theory/ Practical –Topics/Lesson	
Week	Date/Period		
1	29/01/2024 TO 03/02/2024	FUNDAMENTALS OF ENGINEERING MECHANICS Fundamentals. Definitions of Mechanics, Statics, Dynamics, Rigid Bodies, Force Force System. Definition, Classification of force system according to plane & line of action. Characteristics of Force & effect of Force. Principles of Transmissibility & Principles of Superposition. Action & Reaction Forces & concept of Free Body Diagram.	White Board Marker Smart board
2	05/02/2024 TO 10/02/2024	Resolution of a Force. Definition, Method of Resolution, Types of Component forces, Perpendicular components & non-perpendicular components. Composition of Forces. Definition, Resultant Force, Method of composition of forces, such as Analytical Method such as Law of Parallelogram of forces & method of resolution.	White Board Marker Smart board
3	12/02/2024 TO 17/02/2024	Graphical Method. Introduction, Space diagram, Vector diagram, Polygon law of forces. Resultant of concurrent, non-concurrent & parallel force system by Analytical & Graphical Method. Moment of Force. Definition, Geometrical meaning of moment of a force, measurement of moment of a force & its S.I units.	White Board Marker Smart board
4	19/02/2024 TO 24/02/2024	Classification of moments according to direction of rotation, sign convention, Law of moments, Varignon's Theorem, Couple – Definition, S.I. units, measurement of couple, properties of couple. EQUILIBRIUM Definition, condition of equilibrium, Analytical & Graphical conditions of equilibrium for concurrent	White Board Marker Smart board

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Week	Date/Period	Theory/ Practical –Topics/Lesson	Teaching Aid
5	26/02/2024 TO 02/03/2024	Non-concurrent & Free Body Diagram. Lamia's Theorem – Statement, Application for solving various engineering problems.	White Board Marker Smart board
6	04/03/2024 TO 09/03/2024	FRICTION Definition of friction, Frictional forces, Limiting frictional force, Coefficient of Friction. Angle of Friction & Repose, Laws of Friction.	White Board Marker Smart board
7	11/03/2024 TO 16/03/2024	Advantages & Disadvantages of Friction. Equilibrium of bodies on level plane – Force applied on horizontal & inclined plane (up &down).	Marker White Board
8	18/03/2024 TO 23/03/2024	Ladder, Wedge Friction. **CENTROID & MOMENT OF INERTIA** Centroid – Definition, Moment of an area about an axis.	White Board Marker Smart board
9	27/03/2024 TO 30/03/2024	Centroid of geometrical figures such as squares, rectangles, triangles, circles, semicircles & quarter circles, centroid of composite figures.	White Board Marker Smart board
10	02/04/2024 TO 06/04/2024	Moment of Inertia – Definition, Parallel axis & Perpendicular axis Theorems.	Marker White Board Smart board
11	08/04/2024 TO 13/04/2024	M.I. of plane lamina & different engineering sections. I.A	White Board Marker Smart board
12	15/04/2024 TO 20/04/2024	SIMPLE MACHINE Definition of simple machine, velocity ratio of simple and compound gear train, explain simple & compound lifting machine, Define M.A, V.R. & Efficiency & State the relation between them, State Law of Machine, Reversibility of Machine, Self Locking Machine.	Marker White Board Smart board
13.	22/04/2024 TO 27/04/2024	Study of simple machines – simple axle & wheel, single purchase crab winch & double purchase crab winch, Worm & Worm Wheel, Screw Jack. Types of hoisting machine like derricks etc, Their use and working principle. No problems.	White Board Marker Smart board
14	29/04/2024 TO 04/05/2024	DYNAMICS Kinematics & Kinetics, Principles of Dynamics, Newton's Laws of Motion, Motion of Particle acted upon by a constant force, Equations of motion, De-Alembert's Principle.	White Board Marker Smart board

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15	06/05/2024 TO 11/05/2024	Work, Power, Energy & its Engineering Applications, Kinetic & Potential energy & its application. Momentum & impulse, conservation of energy & linear momentum, collision of elastic bodies, and Coefficient of Restitution.	White Board Marker Smart board
16	13/05/2024 TO 14/05/2024	REVISION.....	White Board Marker Smart board

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