

Lesson Plan

Subject: **ENGINEERING MECHANICS (Th -4)**

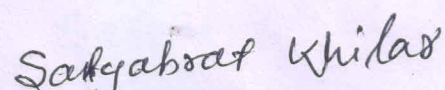
Name of faculty: **Satyabrata Khilar**

Semester: **2nd** Class allotted: **4p/week**

Branch: **CIVIL, ELEC. & META.** Session: **2025(S)**

Discipline	Semester	From date:	To date:	Teaching Aid
Subject:	No. of days/ per week	Theory/ Practical –Topics/Lesson		
Week	Date/Period			
1	04/02/2025 TO 08/02/2025	Unit - 1 Basic of Mechanics and Force System Significance and relevance of Mechanics, Applied mechanics, Statics, Dynamics. Space, time, mass, particle, flexible body and rigid body. Scalar and vector quantity, Units of measurement (SI units) - Fundamental units and derived units.		White Board Marker Smart board
2	10/02/2025 TO 15/02/2025	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 Methods such as Law of Parallelogram of forces & method of resolution.		White Board Marker Smart board
3	17/02/2025 TO 22/02/2025	Composition of forces – Resultant, analytical method for determination of resultant for concurrent, non-concurrent and parallel co-planar force systems – Law of triangle, parallelogram and polygon of forces.		White Board Marker Smart board
4	24/02/2025 TO 01/03/2025	Unit -2 Equilibrium Equilibrium and Equilibrant, Free body and Free body diagram, Analytical and graphical methods of analysing equilibrium. Lami's Theorem – statement and explanation, Application for various engineering problems. Numericals based on above.		White board Marker Smart board
5	03/03/2025 TO 08/03/2025	Types of beam Supports (simple, hinged, roller and fixed) and loads acting on beam (vertical and inclined point load, uniformly distributed load, couple). Numericals based on above.		White Board Marker Smart board
6	10/03/2025 TO 13/03/2025	Beam reaction for cantilever, simply supported beam with or without overhang – subjected to combination of Point load and uniformly distributed load.		White Board Marker Smart board
7	17/03/2025 TO 22/03/2025	Beam reaction graphically for simply supported beam subjected to vertical point loads only. Numericals based on above.		White Board Marker Smart Board


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8	24/03/2025 TO 29/03/2025	Unit -3 Friction Friction and its relevance in engineering, types and laws of friction, limiting equilibrium, limiting friction, co-efficient of friction.	White Board Marker Smart board
9	02/04/2025 TO 05/04/2025	Angle of friction, angle of repose, relation between co-efficient of friction and angle of friction.	White Board Marker Smart board
10	07/04/2025 TO 12/04/2025	Equilibrium of bodies on level surface subjected to force parallel and inclined to plane. Equilibrium of bodies on inclined plane subjected to force parallel to the plane only. Numericals based on Friction.	White Board Marker Smart board
11	16/04/2025 TO 19/04/2025	Unit -4 Centroid and Centre of Gravity Centroid of geometrical plane figures (square, rectangle, triangle, circle, semi-circle, quarter circle) Centroid of composite figures composed of not more than three geometrical figures.	White Board Marker Smart board
12	21/04/2025 TO 26/04/2025	Centre of Gravity of simple solids (Cube, cuboid, cone, cylinder, sphere, hemisphere) Centre of Gravity of composite solids composed of not more than two simple solids. Numericals based on centre of gravity.	White Board Marker Smart board
13.	28/04/2025 TO 03/05/2025	Unit - 5 Simple Lifting Machine Simple lifting machine, load, effort, mechanical advantage, applications and advantages. Velocity ratio, efficiency of machines, law of machine. Ideal machine, friction in machine, maximum Mechanical advantage and efficiency,	White Board Marker Smart board
14	05/05/2025 TO 10/05/2025	reversible and non-reversible machines, conditions for reversibility Velocity ratios of Simple axle and wheel, Differential axle and wheel, Worm and worm wheel,	White Board Marker Smart board
15	13/05/2025 TO 17/05/2025	Single purchase and double purchase crab winch, Simple screw jack, Weston's differential pulley block, geared pulley block. Numericals based on simple lifting machine.	White Board Marker Smart board


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