

LESSON PLAN			
Discipline : MECHANICAL ENGG.		Semester: 2nd Sem	Name of the Teaching Faculty :Sagar Kumar Mohapatra
Subject :Engg. Mechanics		No. of Days / per week class allotted : 04	Semester From date : 04.02.2025 To Date : 17.05.2025
MONTH	Week	Day	Topics
FEBRUARY	2nd	2nd	1. FUNDAMENTALS OF ENGINEERING MECHANICS Definitions of Mechanics, Statics, Dynamics, Rigid Bodies
		3rd	1.2 Force System. Definition, Classification of force system according to plane & line of action.
		4th	Characteristics of Force & effect of Force. Principles of Transmissibility & Principles of Superposition
	3rd	1st	Action & Reaction Forces & concept of Free Body Diagram
		2nd	1.3 Resolution of a Force. Definition, Method of Resolution, Types of Component forces
		3rd	resolution
		4th	parallelogram law problem solved
	4th	1st	parallelogram law problem solved
		2nd	1.4.2. Graphical Method. Space diagram, Vector diagram, Polygon law of forces
		3rd	1.5 Moment of Force. Definition, measurement of moment of a force & its S.I units. Classification of moment
		4th	Varignon's Theorem, Couple – Definition, S.I. units, measurement of couple, properties of couple.
	5th	1st	2. EQUILIBRIUM 2.1 Definition, condition of equilibrium
		2nd	2.2 Lamia's Theorem – Statement, proof
		4th	problem solved related to lami's theorem
	MARCH	2nd	1st
2nd			3. FRICTION 3.1 Definition of friction, Limiting frictional force, Coefficient of Friction. Angle of Friction
4th			Angle of Repose, Laws of Friction, Advantages & Disadvantages of Friction
3rd		1st	3.2 Equilibrium of bodies on level plane – Force applied on horizontal plane.
		2nd	3.2 Equilibrium of bodies on level plane – Force applied on Inclined plane.
		3rd	CLASS TEST
		4th	3.3 Ladder Friction.
4th		1st	Wedge Friction.
		2nd	Problem solved
		3rd	Problem solved
	4th	Problem solved	

	5th	1st	4. CENTROID & MOMENT OF INERTIA 4.1 Centroid – Definition, Moment of an area about an axis, centroid of geometrical figures such as rectangles	
		2nd	Centroid of triangles and circles centroid of composite figures.	
		3rd	Centroid of semicircles & quarter circle	
		4th	4.2 Moment of Inertia – Definition, Parallel axis & Perpendicular axis Theorems.	
APRIL	1st	3rd	M.I. of rectangular lamina	
		4th	M.I of circular lamina and triangular lamina.	
	2nd	1st	Problem solved	
		2nd	Problem solved	
		3rd	5. SIMPLE MACHINES 5.1 Definition of simple machine, define M.A, V.R. & Efficiency & State the relation between them	
		4th	INTERNAL	
	3rd	2nd	State Law of Machine, Reversibility of Machine, Self Locking Machine	
		3rd	5.2 Study of simple machines – simple axle & wheel,	
		4th	single purchase crab winch & double purchase crab winch	
	4th	1st	Worm and worm wheel, Screw jack	
		2nd	velocity ratio of simple gear train.	
		3rd	velocity ratio of compound gear train.	
		4th	5.3 Types of hoisting machine like derricks etc, Their use and working principle.	
	MAY	1st	4th	Problem solved
		2nd	1st	6. DYNAMICS 6.1 Kinematics & Kinetics, Principles of Dynamics, Newton's Laws of Motion, Motion of Particle acted upon by a constant force.
			2nd	Equations of motion, D'Alembert's Principle. 6.2 Work, Power, Energy & its Engineering Applications
3rd			Kinetic & Potential energy & its application.	
4th			6.3 Momentum & impulse, conservation of energy & linear momentum.	
3rd		2nd	Collision of elastic bodies, and Coefficient of Restitution.	
		3rd	Problem solved	
		4th	Problem solved	