Government Polytechnic, Tikarpada || Lesson Plan			
Discipline : MECHANICAL		Semester: 2nd Sem	Name of the Teaching Faculty : Anup Kumar Panda
Subject : Engineering Mechanics		No. of Days / per week class	Semester From date : 09.01.2026 To Date : 08.05.2026
MONTH	Week	Day	Topics
January	3rd	1st	Significance and relevance of Mechanics,
		2nd	Applied mechanics, Statics, Dynamics.
		4th	Space, time, mass, particle, flexible body and rigid body.
	4th	1st	Scalar and vector quantity, Units of measurement (SI units) - Fundamental units and derived units.
		2nd	Force – unit, representation as a vector and by Bow's notation
		3rd	characteristics and effects of a force
		4th	Principle of transmissibility of force, Force system and its classification.
	5th	2nd	Resolution of a force - Orthogonal components of a force, moment of a force
		3rd	Varignon's Theorem.
		4th	Composition of forces – Resultant,
FEBRUARY	1st	1st	analytical method for determination of resultant for concurrent, non-concurrent and parallel co-planar force systems
		2nd	Law of triangle, parallelogram and polygon of forces.
		3rd	Equilibrium and Equilibrant,
		4th	Free body and Free body diagram
	2nd	1st	Analytical and graphical methods of analysing equilibrium Lami's Theorem – statement and explanation
		2nd	Application for various engineering problems.
		3rd	Types of beam, supports (simple, hinged, roller and fixed) and
		4th	loads acting on beam (vertical and inclined point load, uniformly distributed load, couple),
	3rd	1st	Beam reaction for cantilever, simply supported beam
		2nd	with or without overhang – subjected to combination of Point load and uniformly distributed load.
		3rd	Beam reaction graphically for simply supported beam subjected to vertical point loads only.
		4th	Friction and its relevance in engineering, types and laws of friction
	4th	1st	limiting equilibrium, limiting friction, co-efficient of friction, angle of friction, angle of repose
		2nd	relation between co-efficient of friction and angle of friction,Equilibrium of bodies on level surface subjected to force parallel and inclined to plane
		3rd	Equilibrium of bodies on inclined plane subjected to force parallel to the plane only
		4th	CLASS TEST 1
MARCH	1st	1st	Centroid of geometrical plane figures (square, rectangle, triangle, circle, semi-circle, quarter circle)
		4th	Centroid of composite figures composed of not more than three geometrical figures
	2nd	1st	Centre of Gravity of simple solids (Cube, cuboid, cone)
		2nd	cylinder, sphere, hemisphere
		3rd	Centre of Gravity of composite solids composed of not more than two simple solids.
		4th	1ST INTERNAL ASSESSMENT
	3rd	1st	Simple lifting machine, load, effort, mechanical advantage
		2nd	applications and advantages.
		3rd	Velocity ratio, efficiency of machines, law of machine.
		4th	Ideal machine, friction in machine, maximum Mechanical advantage and efficiency
	4th	1st	reversible and non-reversible machines, conditions for reversibility
		2nd	Velocity ratios of Simple axle and wheel, Differential axle and wheel,
		3rd	Worm and worm wheel, Single purchase and double purchase crab winch
		4th	Simple screw jack.
	5th	1st	Weston's differential pulley block, geared pulley block.
		2nd	CLASS TEST 2
APRIL	2nd	1st	Revision of chapter 1
		2nd	Revision of chapter 1
		3rd	Revision of chapter 1
		4th	Revision of chapter 2
	3rd	1st	Revision of chapter 2
		3rd	Revision of chapter 2
		4th	Revision of chapter 3
	4th	1st	Revision of chapter 3
		2nd	Revision of chapter 3
		3rd	Revision of chapter 4
		4th	2ND INTERNAL ASSESSMENT
	5th	1st	Revision of chapter 4
		2nd	Revision of chapter 4
		3rd	Revision of chapter 5
		4th	Revision of chapter 5
MAY	2nd	1st	Revision of chapter 5
		2nd	Previous Year question Discussion
		3rd	Previous Year question Discussion
		4th	Previous Year question Discussion

Subject Expert, Govt Polytechnic, Mayurbhanj Hod Mechanical, Govt. Polytechnic, Mayurbhanj Academic Coordinator, Govt. polytechnic, Mayurbhanj