

OSME Keonjhar

Department of Mechanical Engineering

Lesson Plan

Discipline: Math and Science		Semester: 2nd		Faculty: <i>Mr Barun Kumar Barik</i>
Subject: Engineering Mechanics (TH4)		No of day/week of class allotted: 4		Semester starts from- 20/03/2023 To:27/06/2023
MONTH	WEEK	AVAILABILITY OF CLASSES	CLASS DAY	THEORY TOPICS
MARCH	1 st	04	22/03/2023 22/03/2023	Module 1:fundamentals of Engineering mechanics Defination of mechanics, static, dynamics, rigid body
			25/03/2023 25/03/2023	Defination of force, force system. Classification of force system according to plane and line of action. characteristics of force and effect of force.
April	2nd	04	05/04/2023	Principle of transmissibility, principle of super position ,law of action and reaction
			05/04/2023	Free body diagram.
			08/04/2023 08/04/2023	Resolution of force (perpendicular and non perpendicular component),Composition of force (resultant force, triangle law)
	3rd	04	12/04/2023	Parallelogram law and polygon law of force.
			12/04/2023	Method of resolution and graphical method of resultant force.
			15/04/2023 15/04/2023	Numerical solve on resultant force.
	4th	04	19/04/2023	Moment of force (defination, law and classification)
			19/04/2023	Couple (defination ,classification and properties)
			22/04/2023 22/04/2023	Numerical solve on moment of force and couple.
APRIL	5 th	04	26/04/2023	Module 2:EQUILIBRIUM Defination and classification of equilibrium. Analytical and graphical conditions of equilibrium for concurrent and non concurrent system of force.
			26/04/2023	Lami's theorem (statement ,prove and application)
			29/04/2023 29/04/2023	Numerical solve on lami's theorem
MAY	6 th	04	03/05/2023	CLASS TEST 1
			03/05/2023	Modue 3:FRICITION Defination, frictional force and classification
	06/05/2023 06/05/2023	Limiting friction, coefficient of friction, angle of repose. Law of limiting friction, advantages and disadvantages of friction.		
	7th	04	10/05/2023	Equilibrium of body –force applied on horizontal

MAY				plane. Equilibrium of body-Force apply on inclined plane.
			10/05/2023	Ladder friction, Wedge friction.
			13/05/2023 13/05/2023	Numerical on friction
	8th	04	17/05/2023	MODULE 4: CENTROID AND MOMENT OF INERTIA: Defination, moment of an area about an axis, Centroid of geometrical figure such as square, rectangle ,triangles, circles.
			17/05/2023	Centroid of geometrical figures such as semicircles and quarter circles, centroid of composite figures.
			20/05/2023 20/05/2023	Numerical on centroid.
	9th	04	24/05/2023	Moment of inertia- defination, M.I. of plane lamina. M.I. of different engineering section
			24/05/2023	CLASS TEST 2
			27/05/2023 27/05/2023	Parallel and perpendicular axis theorem. Numerical practice
	JUNE	10th	04	31/05/2023
31/05/2023				Relation between M.A , V.R and efficiency. V.R. of Simple and compound gear train.
03/06/2023 03/06/2023				Law of machine, reversibility of machine, self locking machine. Numerical solve
11th		02	07/06/2023	Study of simple machine- simple axle and wheel, worm and worm wheel.
			07/06/2023	Single purchase crab winch and double purchase crab winch. Numerical solve
12th		04	10/06/2023	Screw jack. Numerical solve
			10/06/2023	Hoisting machine like derricks use and working principle
			14/06/2023 14/06/2023	MODULE 6: DYNAMICS: Kinematics and kinetics, principle of dynamics, Newton's law of motion.
13th		04	17/06/2023	CLASS TEST 3
			17/06/2023 21/06/2023 21/06/2023	Motion of particles acted upon by a constant force, equation of motion, De albert's principle. Work ,power, energy and its engineering application. Kinetic energy and potential energy and its application. Numerical solve
			24/06/2023	Momentum and impulse, conservation of energy and linear momentum, collision of elastic bodies and co efficient of restitution. Numerical solve
14th		02	24/06/2023	PREVIOUS YEAR QUESTION SOLVE