

LESSION PLAN

BRANCH CIVIL,ETC &CS	SEMESTER : 1ST	NAME OF THE TEACHING FACULTY : ER. JYOTIRMAY JENA
SUBJECT : ENGINEERING MECHANICS (TH-4)	NO. OF DAYS PER WEEK : 5 NOS. CLASS ALLOTTED : 65 NOS.	SEMESTER FROM DATE : 26.10.2022 TO 31.01.2023 NO. OF WEEKS : 13 NOS.
WEEK	CLASSDAY	THEORY TOPICS
1ST	1st	FUNDAMENTALS OF ENGINEERING MECHANICS:Definations of Mechanics,Statics,Dynamics,Rigid bodies.Force,Its Effect and and its units.Classification of Force system.
	2nd	Graphical representation of Force,Characterstics of Force,Principle of Transmissibility and Superposition.
	3rd	Action and Reaction Forces. FBD.
	4th	Resolution of a Force:Defination,Method of Resolution,Types of Component forces,Perpendicular and Nonperpendicular component.
	5th	Compostion of Forces:Defination,Resultant Force,Method of Composition of Forces.Parallelogram law of Forces.
2ND	1st	Numerical using Parallelogram law of forces
	2nd	Method of Resolution Numericals
	3rd	Numerical using Method of Resolution
	4th	Graphical Method:Introduction ,Space diagram,Vector diagram,Triangle and Polygon law
	5th	Review class
3RD	1st	Moment of Force:Defination,Geometrical meaning,Measurement of Moment of a Force & its SI Units.Classification of Moments according to direction of Rotation,Sign convention,Law of Moments.
	2nd	Numericals
	3rd	Varignon's Theorem,Numerical using Varignon's Theorem
	4th	Class Test
	5th	Couple:Definations,SI Units,Measurement of Couple,Properties of Couple.
4TH	1st	Review class
	2nd	EQUILIBRIUM:Defination,Condition of equilibrium,Analytical & Graphical conditions of equilibrium for concurrent,Non concurrent and Free Body Diagram
	3rd	LAMI'S Theorem(Statement),Numerical using LAMI'S Theorem
	4th	Numerical Problem Solved
	5th	Numerical Problem Solved
5TH	1st	Review Class
	2nd	FRICTION:Defination,Frictional Forces,Laws of Friction,Advantages and Disadvantages of Friction.Limiting Frictional Forces,Coefficient of Friction
	3rd	Angle of Friction and Repose.Friction on horizontal plane .
	4th	Numerical Problem Solved
	5th	Friction on Inclined Plane
6TH	1st	Numerical Problem Solved
	2nd	Ladder Friction,Numerical Problem Solved
	3rd	Wedge Friction,Numerical Problem Solved
	4th	Review Class
	5th	Class Test
7TH	1st	CENTROID:Defination,Moment of an area about an axis,Centroid of geometrical figures like square,rectangle etc.Centroid of Composite Figures
	2nd	Numerical-Centroid of Composite Figures.
	3rd	Numerical-Centroid of Composite Figures.
	4th	Numerical-Centroid of Composite Figures.

	5th	Numerical-Centroid of Cutout sections.
8TH	1st	MOMENT OF INERTIA:Defination,Parallel axis and Perpendicular axis Theorems
	2nd	MI Of a Plane lamina,MI Of a Rectangular section(derivation).MI Of other geometrical sections(Formula only)
	3rd	Numerical- MI Of Composite figures
	4th	Numerical- MI Of Composite figures
	5th	Numerical- MI Of Composite figures
9TH	1st	Review class
	2nd	Class Test
	3rd	SIMPLE MACHINES: Defination of Simple and compound lifting machine;MA,VR & Efficiency relation between them.
	4th	Self locking and Reversible machine.Law of Machine .Friction loss .
	5th	Numerical:To determine MA,VR,Efficiency and Friction loss
10TH	1st	Numerical- To determine Law of machine
	2nd	Velocity ratio of simple and compound gear train.
	3rd	Study of Simple axle & wheel.Numerical
	4th	Study of Screw jack.Numerical
	5th	Study of single purchase crab winch and double purchase crab winch Numerical.
11TH	1st	Worm and Worm wheel.Numerical .Types of Hoisting machine
	2nd	Review class
	3rd	Class Test
	4th	Kinematics and Kinetics,Newton's Laws of Motion,Equations of Motion.
	5th	Numerical related to Laws of Motion.
12TH	1st	Numerical related to Equations of Motion
	2nd	De-Alembert's Principle,Related numerical
	3rd	Work,Power,Energy and its engineering applications.Kinetic and Potential energy and its application.Conservation of Energy.
	4th	Numerical related to Potential and kinetic energy.
	5th	Impulse and Momentum,Collision of elastic bodies.Conservation of Momentum.Coefficient of Restitution.
13TH	1st	Numerical related to Impulse and Momentum
	2nd	Numerical related to Collision and Coefficient of Restitution.
	3rd	Numerical related to Collision and Coefficient of Restitution.
	4th	Review Class
	5th	Discussion of Previous year Questions.

SIGNATURE OF H.O.D.

SIGNATURE OF LECTURER