LESSON PLAN FOR ENGINEERING MECHANICS

Electrical Engg. (2021-22)	**1st Semester**	**Er. Rama Krishna Sahu**
ENGINEERING MECHANICS	04/week	Semester :
		No. of weeks :15
Week	Class day	Theory topics
1	1st	Introduction, Course outcomes, Reference books for subject.
	2nd	Force, characteristics, effect and classification of force.
	3rd	Action and reaction force, free body diagram
	4th	Resolution of a force, methods, types of components force
2	1st	Numericals on resolution of force.
	2nd	Resultant force, Parallelogram law of forces
	3rd	Numericals on resultant force
	4th	Space diagram, vector diagram and numericals ny graphical method
3	1st	Force systems , resultant of force systems
	2nd	Moment, classification and sign conventions of moment.
	3rd	Law of moment, Varignon's theorem
	4th	Numericals on moment, like & unlike parallel forces
4	1st	Couple, units, properties of couple.
	2nd	Numerical of couple and class test
	3rd	Introduction to equilibrium and condition of equilibrium
	4th	Lami's theorem, application of equilibrium
5	1st	Numerical on Lami's theorem .
	2nd	Numerical on Lami's theorem .
	3rd	Class test of chapter 1&2.
	4th	Introduction to Friction , application of friction
6	1st	Limiting friction, coefficient of friction , angle of friction, angle of repose.
	2nd	Numericals on friction in horizontal plane
	3rd	Law of friction, advantages and disadvantages of friction.
	4th	Friction in inclined plane.

7	1st	Numerical on friction in inclined plane
	2nd	Numerical on friction in inclined plane
	3rd	Application of friction(Ladder and wedge)
	4th	Numericals on Ladder friction
8	1st	Class test on friction topic.
	2nd	Introduction to Centre of Gravity(C.G). Importance of C.G
	3rd	Centroid , C.G for common geometric shapes
	4th	Axis of reference, C.G of plane figures, symmetry section.
9	1st	Centroid of composite figures.
	2nd	Numericals on centre of gravity
	3rd	Numericals on centre of gravity
	4th	Class work of numericals on C.G
10	1st	Introduction to Moment of Inertia(MI) , application of MI.
	2nd	Parallel axis theorem and perpendicular axis theorem.
	3rd	Moment of inertia of plane lamina and different sections
	4th	Numericals on Moment of Inertia for engineering sections
11	1st	Numericals on Moment of Inertia for engineering sections
	2nd	Class test on CG and MI
	3rd	Introduction to machine and general uses of machine
	4th	Simple machine, types, efficiency of machine
12	1st	Ideal machine, velocity ratio, mechanical advantages.
	2nd	Relationship of VR, MA and efficiency. Numerical on simple machines
	3rd	Law of machine. Numericals on law of machine
	4th	Reversibility and self locking conditions of machine
13	1st	Simple axle, worm& worm wheel, crab winch
	2nd	Simple gear train and compound gear train
	3rd	Numerical on Gear train
	4th	Simple screw jack, application of screw jack

14	1st	Numericals on simple machine
	2nd	Introduction to Dynamics, classification.
	3rd	Newton's laws of motion, De-Alembert's principle
	4th	Simple numericals on motion of body
15	1st	Work, power, energy. Types of energy and applications
	2nd	Momentum, Impulse, Conservation of energy
	3rd	Collision, Coefficient of restitution
	4th	Model question paper practice. Closing of subject.

TOTAL PERIODS: 60
NO. OF WEEKS : 15