LESSON PLAN
NAME OF TEACHER –MR. MANOJ KUMAR
BRANCH-MECHANICAL ENGINEERING
SEMESTER-SECOND
SUBJECT-APLLIED MECHANICS
DURATION-16 WEEKS
(THEORY)-03 LECTURES/WEEK
PRACTICALS- 02 HOURS/WEEK

WEEK	Sr. No.	TOPICS	DATE	SIGNATURE OF TEACHER	SIGNATURE OF HOD
1	1.	Introduction:- concept of engineering mechanics, definition of mechanics and applied mechanics, statics, dynamics, applications of mechanics			
	2.	Definition of basic and derived quantities, basic units and derived units			
	3.	Definition of system of units and their types, conversion from one form to another			
2	4.	Concept of Rigid body, scalar and vector quantities			
	5.	Laws of force:- definition of force, measurement of force in SI units, its representation, types of force, point and uniformly distributed forces			
	6.	Effects of force, characteristics of force			
3	7.	Different force systems(Coplanar and Non- Coplanar), principle of transmissibility of forces, Law of superposition			
	8.	Composition and resolution of coplanar concurrent forces, resultant force			
	9.	Method of composition of forces, laws of forces, triangle law of forces, polygon law of forces(graphically and analytically)			
4	10.	Resolution of forces, resolving a force into two rectangular components			
	11.	Free body diagram			
	12.	Equilibrium force and its determination			
5	13.	Lami's theorem			
	14.	Moment:- Concept of moment			
	15.	Moment of a force and units of moment			
6	16.	Varignon's theorem			
	17.	Principle of moment and its applications			
	18.	Levers-simple and compound, steel yard, safety valve, reaction at support			

WEEK	Sr.No.	TOPICS	DATE	SIGNATURE OF TEACHER	SIGNATURE OF HOD
7	19.	Parallel forces (like and unlike forces), calculating their resultant			
	20.	Concept of couple, its properties and effects			
	21.	General conditions of equilibrium of bodies under coplanar forces			
8	22.	Position of resultant force by moment			
	23.	Friction:- Definition and concept			
	24.	Types and force of friction			
9	25.	Laws of static friction, coefficient of friction			
	26.	Angle of friction, angle of repose, cone of friction			
	27.	Equilibrium of a body lying on a horizontal plane			
10	28.	Equilibrium of a body lying on a rough inclined plane			
	29.	Centre of gravity:- Concept, definition of centroid of plain figures			
	30.	Centre of gravity of symmetrical solid bodies			
11	31.	Definition of centroid of plain Lamina using moment method			
	32.	Definition of centroid of composite Lamina using moment method			
	33.	Centroid of bodies with removed portion			
12	34.	Determination of centre of gravity of solid bodies-cone, cylinder			
	35.	Determination of centre of gravity of solid bodies-hemisphere, sphere			
	36.	Determination of centre of gravity of Composite bodies and bodies with removed portion			
13	37.	Simple Machines:- Definition of effort, velocity ratio, mechanical advantage and efficiency of a machine and their relationship, law of machines			
	38.	Simple and compound machines			
	39.	Definition of ideal machine, reversible and self- locking machine			
14	40.	Effort lost in friction, load lost in friction, determination of maximum mechanical advantage and maximum efficiency			
	41.	System of pulleys(First, second and third system of pulleys), determination of velocity ratio, mechanical advantage and efficiency			
	42.	Working principle and application of wheel and axle, Weston's differential pulley block, simple screw jack, worm and worm wheel, single and double winch crab			

WEEK	Sr.No.	TOPICS	DATE	SIGNATURE OF TEACHER	SIGNATURE OF HOD
15	43.	Torsion:- Torsion in shafts/bars			
	44.	Modulus of rigidity			
	45.	Torsional Equation			
16	46.	Simple numericals on torsional equation			
	47.	Power transmission in shafts			
	48.	Simple numericals on power transmission in shafts			