

| WEEK | CLASS DAY | TOPICS |
|-----------------|-----------------|---|
| 1 ST | 1 ST | Fundamentals. Definition of mechanics ,statics, dynamics, rigid bodies |
| | 2 ND | Force System: Definitions ,Classification of force system according to plane & line of action |
| | 3 RD | Characteristics of Force , Principle of transmissibility & superposition. Action & Reaction forces & concept of free body diagram |
| | 4 TH | Resolution of a force. Definition, method of resolution, Types of component forces, perpendicular components & non-perpendicular components |
| 2 ND | 1 ST | Composition of forces: Definition , Resultant force, method of composition of force |
| | 2 ND | Solving numericals |
| | 3 RD | Polygon law of forces, Graphical method, space diagram , vector diagram |
| | 4 TH | Solving numericals |
| 3 RD | 1 ST | Parallel force system: Analytical & Graphical method |
| | 2 ND | Moment of force: Definition, Geometrical meaning & measurement of moment of a force & S.I. units |
| | 3 RD | Classification of moment according to direction of rotation, sign convention |
| | 4 TH | Laws of moments: Varignon's theorem |
| 4 TH | 1 ST | Couple – Definition, S.I. units, Measurement of couple, properties of couple |
| | 2 ND | Solving numerical , class test |
| | 3 RD | Equilibrium Definition, condition of equilibrium for concurrent forces |
| | 4 TH | Analytical & graphical conditions of equilibrium for non-concurrent forces |
| 5 TH | 1 ST | Analytical & graphical conditions of equilibrium for non-concurrent forces & free body diagram |
| | 2 ND | Solving numericals |
| | 3 RD | Derivation Lami's Theorem |
| | 4 TH | Application of Lami's theorem for solving engineering problems |
| 6 TH | 1 ST | Solving numericals |
| | 2 ND | Class test |
| | 3 RD | Friction: Definition of friction , Frictional forces |
| | 4 TH | Limiting frictional force |
| 7 TH | 1 ST | Coefficient of friction, numericals |
| | 2 ND | Angle of friction, Repose |
| | 3 RD | Laws of friction, Advantages & Disadvantages of friction |
| | 4 TH | Equilibrium of bodies on level plane-Force applied on horizontal |
| 8 TH | 1 ST | Equilibrium of bodies on level plane-Force applied on inclined plane (up&down) |

| | | |
|------------------|-----------------|--|
| | 2 ND | Ladder. Wedge friction |
| | 3 RD | Solving numerical |
| | 4 TH | Class test |
| 9 TH | 1 ST | Centroid & moment of inertia: centroid- definition |
| | 2 ND | Moment of an area about an axis |
| | 3 RD | Centroid of geometrical figures such as squares |
| | 4 TH | Centroid of geometrical figures such as rectangle |
| 10 TH | 1 ST | Centroid of geometrical figures such as triangles |
| | 2 ND | Centroid of geometrical figures such as circles |
| | 3 RD | Centroid of geometrical figures such as , semi circle & quarter circles |
| | 4 TH | Solving numericals |
| 11 TH | 1 ST | Moment of inertia- definition |
| | 2 ND | Parallel axis & perpendicular axis theorem |
| | 3 RD | M.I. plane lamina |
| | 4 TH | M.I. of different engineering sections |
| 12 TH | 1 ST | Solving numericals |
| | 2 ND | Class test |
| | 3 RD | Simple Machines: Definition. Velocity ratio of simple and compound gear train, simple & compound lifting machine |
| | 4 TH | Define M.A, V.R. & Efficiency & relation between them |
| 13 TH | 1 ST | State law of Machine , Reversibility of machine self locking machine. |
| | 2 ND | Study of simple machines- simple axle & wheel, single purchase crab winch & double purchase crab winch |
| | 3 RD | Worm & Worm wheel, screw jack. |
| | 4 TH | Types of hoisting machine like derricks etc. |
| 14 TH | 1 ST | Their use and working principle |
| | 2 ND | Class test |
| | 3 RD | Kinematics & kinetics, principles of dynamics, Newton's laws of motion |
| | 4 TH | Motion of particle acted upon by a constant force, Equations of motion, D'Alembert's principle |
| 15 TH | 1 ST | Solving numericals |
| | 2 ND | Work power , Energy & its engineering applications, kinetics & potential energy & its application |
| | 3 RD | Momentum & impulse, conservation of energy & linear momentum, collision of elastic bodies, and coefficient of restitution. |
| | 4 TH | Solving numericals . class test |

SSPM
16.08.23