LESSON PLAN ENGINEERING MECHANICS 2019-2020

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| Hrs. | Module 1.1 | System Of Coplanar Forces | |
| 1 Hr | System of coplanar forces | 1. Introduction to Mechanics 2. Classification of Forces 3. Resultant of Concurrent Forces 4. Resultant of Parallel Forces | |
| 1 Hr |  | 1. Resultant of non-concurrent & non-parallel forces. 2. Moment & Couples | |
| 1 Hr |  | 1. Varignon’s theorem 2. Distributed forces in a plane | |
| 1 Hr |  | 1. Space Force System | |
|  | | Module 1.2 | Centroid |
| 2 Hr | | Centroid | 1. Definition – centre of gravity of forces for a plane 2. Problems on centroid 3. Problems on centroid   4 Problems on centroid |
|  | | Module 2.1 and 2.2 | Equilibrium Of Forces and Equilibrium of Beams |
| 1 Hr | | Equilibrium of forces | 1. Definition & meaning of equilibrium of forces. 2. Free body diagrams. |
| 1 Hr | |  | 1. Equilibrium for concurrent forces. 2. Equilibrium for parallel forces. 3. Equilibrium for non-concurrent & non parallel forces, Equilibrium of Rigid Bodies |
| 1 Hr | |  | 1. Types of supports, Determination of support reaction of Beams, Various Types of Loads |
| 1 Hr | |  | 1. Problems based on equilibrium of con-current & non-concurrent forces. |
|  | Module 3 | Friction | |
| 1 Hr | Friction | 1. Theory of Friction, angle and laws of friction.,Concept of cone of Friction | |
| 1 Hr |  | 1. Equilibrium of bodies on inclined plane. | |
| 1 Hr |  | 1. Applications to wedges. | |
| 1 Hr |  | 1. Problems. 2. Applications to ladders 3. Problems | |
| Hrs. | | Module 4 | Kinematics Of Particles |
| 1 Hr | | Kinematics Of Particles | 1. Introduction to Dynamics 2. Rectilinear motion of particles- Definition of displacement, velocity and acceleration, relation between them |
| 1 Hrs | |  | 1. Problems based on rectilinear motion, Variable Acceleration |
| 1 Hr | |  | 1. Velocity and acceleration Vs. time graph 2. Problems |
| 1 Hrs | |  | 1. Kinematics of connected bodies and problems 2. General curvilinear motion 3. Tangential and normal components of acceleration |
| 1Hrs | |  | 1. Motion of projectiles 2. problems on motion projectiles |
|  | | Module 5 | Kinematics Of Rigid Body |
| 1 Hr | | Kinematics Of Rigid Body | Introduction to general plane motion |
| 1 Hr | |  | Instantaneous centre of rotation for the velocity |
| 1 Hr | |  | Velocity diagrams for bodies in plane motion |
| 1 Hrs | |  | Application to link mechanisms problems  Instantaneous centre method for velocity  University problems and revision |
|  | | Module 6.1 | Kinetics Of a particle |
| 1 Hr | | Kinetics Of a particle | Introduction to Kinetics Of a particle  D’Alemberts principle,Equlibrium equation  Newton’s second law of motion |
| 2Hr | |  | Problems |
| 1 Hr | |  | Motion of connected bodies and problems |
|  | | Module 6.2 | Kinetics Of a particle work and energy |
| 1 Hr | | Kinetics Of a particle | Introduction to work energy and work energy principle |
| 2Hr | |  | Problems on energy and work energy principle |
|  | | Module 6.3 | Kinetics Of a particle impulse and momentum |
| 1 Hr | | Kinetics Of a particle | Introduction to impulse and momentum principle impact and collision |
| 2Hr | |  | Problems on impulse and momentum principle  Problems on impact and collision |

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