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
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| 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.
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| 1 Hr |  | 1. Equilibrium for concurrent forces.
2. Equilibrium for parallel forces.
3. Equilibrium for non-concurrent & non parallel forces, Equilibrium of Rigid Bodies
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| 1 Hr |  | 1. Types of supports, Determination of support reaction of Beams, Various Types of Loads
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| 1 Hr |  | 1. Problems based on equilibrium of con-current & non-concurrent forces.
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|  | Module 3 | Friction |
| 1 Hr | Friction | 1. Theory of Friction, angle and laws of friction.,Concept of cone of Friction
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| 1 Hr |  | 1. Equilibrium of bodies on inclined plane.
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| 1 Hr |  | 1. Applications to wedges.
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| 1 Hr |  | 1. Problems.
2. Applications to ladders
3. Problems
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| 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
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| 1 Hrs |  | 1. Problems based on rectilinear motion, Variable Acceleration
 |
| 1 Hr |  | 1. Velocity and acceleration Vs. time graph
2. Problems
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| 1 Hrs |  | 1. Kinematics of connected bodies and problems
2. General curvilinear motion
3. Tangential and normal components of acceleration
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| 1Hrs |  | 1. Motion of projectiles
2. problems on motion projectiles
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|  | 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 problemsInstantaneous centre method for velocityUniversity problems and revision |
|  | Module 6.1 | Kinetics Of a particle |
| 1 Hr | Kinetics Of a particle | Introduction to Kinetics Of a particleD’Alemberts principle,Equlibrium equationNewton’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 principleProblems on impact and collision |

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