

Engineering Mechanics , Statics and Dynamics

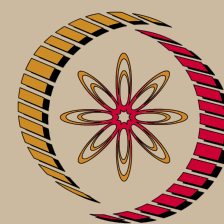
- Video course

COURSE OUTLINE

The course covers topics on basics of rigid bodies,introduction to trusses and joints,discussion on beams,overview of friction and work & energy,plane kinematics,plane kinetics,work-energy and impulse-momentum methods,overview of vibrations.

COURSE DETAIL

Week No.	Topics
1	<ul style="list-style-type: none"> • Rigid bodies • Degrees of freedom • Equations of equilibrium • Equilibrium solved example-1 • Equilibrium solved example-2 • Equilibrium solved example-3
2	<ul style="list-style-type: none"> • Structural systems and modeling • Trusses - Intro, axial members, method of joints • Method of sections, stability, etc • Method of sections (example) • Method of force equilibrium (example) • Zero force members and stability (example)
3	<ul style="list-style-type: none"> • Beams, Shear Force Diagram & Bending Moment Diagrams • Relation: SFD and BMD, frames, shafts • SFD & BMD sign convention • SFD & BMD example -1 • SFD & BMD example -2
4	<ul style="list-style-type: none"> • Friction • Friction (models) • Friction example -1 • Friction example -2 • Principle of virtual work
5	<ul style="list-style-type: none"> • Plane kinematics - fixed frame • Plane kinematics - moving frame • Plane kinematics example -1 • Plane kinematics example -2 • Plane kinematics -3
6	<ul style="list-style-type: none"> • Laws of plane kinetics • Plane kinetics (sliding) • Plane kinetics (rolling)



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Mechanical Engineering

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	<ul style="list-style-type: none"> • Plane kinetics (moving CM) • Plane kinetics example -1 • Plane kinetics example -2 	
7	<ul style="list-style-type: none"> • Plane kinetics – work energy method • Plane kinetics - impulse-momentum • Work-energy method example -1 • Work -energy method example -2 • Impulse-momentum method example -1 • Impulse momentum method example -2 	
8	<ul style="list-style-type: none"> • Vibrations (Equations of motion) • Free undamped vibrations • Forced undamped vibrations • Forced damped vibrations • Vibrations example 	