Presented By:

Dr. Govind Gaurav

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THAPAR INSTITUTE
OF ENGINEERING & TECHNOLOGY
(Deemed to be University)

Course Code : UES 009 (L+T)

Course Name : Mechanics

Brief Introduction

Dr. Govind Gaurav
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Qualification:

M.Tech. – Indian Institute of Technology (I.I.T. Roorkee)
Ph.D. – Indian Institute of Technology (I.I.T. Roorkee)

Course Code : UES 009 L + T

Course Name : Mechanics

Batch : 1CS 5 – 8

Lecture (L) :: :: Monday (Batch: 1 CS 5 – 8) :: 3:30 p.m. to 4:15 p.m
Tuesday (Batch: 1 CS 5 – 8) :: 3:30 p.m. to 4:15 p.m

Tutorial (T) :: :: Monday (Batch : 1 CS 5) :: 02:40 p.m. to 3:25 p.m

Google Classroom Code : jf7oaxb

(Get yourself enrolled using personal email id (@gmail.com))

Batch : 1CO 15 – 18

Lecture (L) :: :: Wednesday (Batch: 1 CO 15 – 18) :: 10:30 a.m. to 11:15 a.m
Thursday (Batch: 1 CO 15 – 18) :: 9:40 a.m. to 10:25 a.m

Tutorial (T) :: :: Wednesday (Batch : 1 CO 15) :: 03:30 p.m. to 4:15 p.m

Google Classroom Code : pjtiwar

(Get yourself enrolled using personal email id (@gmail.com))

UES009: MECHANICS

L	T	P	Cr
2	1	2*	2.5

(*:Two hours Lab Once In Semester)

Course Objectives: The objective of this module is to help students develop the techniques needed to solve general engineering mechanics problems. Students will learn to describe physical systems mathematically so that their behavior can be predicted.

Review of Newton's law of motion and vector algebra.
Equilibrium of Bodies: Free-body diagrams, conditions of equilibrium, torque due to a force, statical determinacy.
Plane Trusses: Forces in members of a truss by method of joints and method of sections.
Friction: Sliding, belt, screw and rolling.
Properties of Plane Surfaces: First moment of area, centroid, second moment of area etc.
Shear Force and Bending Moment Diagrams: Types of load on beams, classification of beams; axial, shear force and bending moment diagrams: simply supported, overhung and cantilever beams subjected to any combination of point loads, uniformly distributed and varying load and moment.
Virtual Work: Principle of virtual work, calculation of virtual displacement and virtual work.

Course Learning Outcomes (CLO):

The students will be able to:

1. Determine resultants in plane force systems
2. Identify and quantify all forces associated with a static framework
3. Draw Shear Force Diagram and Bending Moment Diagram in various kinds of beams subjected to different kinds of loads

Text Books:

1. *Shames, I. H. Engineering Mechanics: Dynamics, Pearson Education India (2006).*
2. *Beer, Johnston, Clausen and Staab, Vector Mechanics for Engineers, Dynamics, McGraw-Hill Higher Education (2003).*

Reference Books:

1. *Hibler, T.A., Engineering Mechanics: Statics and Dynamics, Prentice Hall (2012).*
2. *Timoshenko and Young, Engineering Mechanics, Tata McGraw Hill Education Private Limited, (2006).*

Evaluation Scheme:

Sr. No.	Evaluation Elements	Weights (%)
1.	MST	30
2.	EST	45
3.	Sessionals (May include Assignments/Projects/Tutorials/Quiz	25

Evaluation for Current Semester

Evaluation Scheme: UG I ODDSEM 2021-22		
Courses with Lab Components	Sessional	20
	Lab	20
	Written Test	60
	Total	100
Courses without Lab Components	Sessional	30
	Written Test	70
	Total	100