“Since five decades a team of thoroughly knowledgeable faculty members are committed to nurture young innovative engineers into professionals who provide optimal solution to industrial challenges. Students are exposed to academic excellence along with extracurricular activities to inculcate competence in impactful R&D/technical activities and to work as a leader in highly esteemed companies world wide.”

- Prof. Puneet Mahajan
  Head, Dept. of Applied Mechanics

“The post graduates from our department are ambitious and youthful group of innovative technologists who will carve a niche for themselves in the world of technology by the virtue of their zeal for excellence and hard work.

It is an honour for me to invite the recruiting corporates for the campus placement. I am confident that you will leave the campus equally privileged.”

- Dr. Sawan Suman
  Professor-in-Charge, T & P
  Dept. of Applied Mechanics
About us

Department of Applied Mechanics was established in 1964 with a perspective of being a specialized branch involving teaching, research and consultancy works. It creates an ambience in which new ideas flourish for the welfare and development of society. Various national and international collaborative projects are being undertaken by the faculty of the department. Students of the department are able to deal with wide range of technical and on field challenges through the experience that they gain from the industrially oriented projects.

Solid Mechanics
- Composite Materials.
- Failure Analysis
- Dynamics and Vibrations.
- Metal Forming Analysis.
- Finite Element Analysis.
- Smart Structures.
- Bio-mechanics.

Fluid Mechanics
- Wind Effects on Structures.
- Computational Fluid Dynamics.
- Industrial Aerodynamics.
- Pipeline Engineering
- Turbulence studies.
- Flow diagnostics.

Material Science
- Fracture mechanics.
- Metal foams.
- Friction stir welding.
- Molecular dynamics simulation of Nano-composites.
- Microstructure Manipulation.
- Molecular Dynamics.

Design
- Project Feasibility
- Product Design.
- Design Methodology
- Reliability and Failure Analysis
- Computer Aided Design
- Design Optimization
- Finite Element Analysis.
Important Courses -

**ENGINEERING MECHANICS**
- Finite Element Methods
- Experimental Methods for Solids & Fluids
- Applied Computational Method
- Advanced Dynamics
- Modern Engineering Materials
- Failure Analysis and Fracture Mechanics
- Advanced Fluid Mechanics
- Numerical Methods In Fluid Flows
- Advanced Computation Fluid Dynamics
- Turbulent Shear Flows
- Viscous Fluid Flow
- Fluid Transportation Systems
- Theory of Plates and Shells
- Mechanics of Composite Materials
- Applied Elasticity
- Applied Plasticity

**DESIGN ENGINEERING**
- Decision Theory and Design Optimization
- Modelling Analysis
- Finite Element Methods (FEM)
- Advanced FEM
- Feasibility Study
- Product Design I and II
- Design Methods
- Properties and Selection of Engg. Materials
- Experimental Methods for Solid and Fluids
- Advanced Dynamics
- Mechanics of Composite Materials
- Engg. Failure Analysis and Prevention
- Product Reliability and Maintenance
- Fracture Mechanics.
- Computer Aided Design (CAD)
Ongoing Projects - Solid Mechanics

Simulations based on commercial FEA packages-
- Stress analysis of dislocation of bone.
- Reliability analysis of impact loading on composites.
- Design optimization of mechanical components by FEM analysis.
- Simultaneous tuning of modes of vibration.
- Vibration analysis of composite disc.
- Damage modelling of composites.

Simulations with self written codes and their verification by FEA software packages-
- Buckling analysis of stiffened sandwich plate.
- Dynamic analysis & design of long span truss structures.
- Effect of propellant grain stiffness on buckling strength of rocket motor casing.
- Visco-hyper elastic analysis of shell.
- Damage detection in structures using Spectral Element of Lamb waves for Structural Health Monitoring

Experimental solid mechanics-
- Study of micro-fracture analysis of cortical bone under different loading conditions.
- Indentation Vs small-punch test for structural health monitoring.
- Creep damage characterization of Cr-Mo steel, employing accelerated stress rupture test.
- Design and development of groundnut harvester.
Ongoing Projects Fluid Mechanics

❖ Simulations based on commercial CFD packages-
  ❖ Design of pipeline network for flow distribution in high rise building.
  ❖ CFD modeling of flow through shell and tube heat exchanger.
  ❖ Effect of suction flow on flow in a room.
  ❖ Identification of Vortex Shedding from Bilge Keel Fitted in Ships using CFD.
  ❖ Modelling the CSF (cerebro-spinal fluid) dynamics in the human brain.

❖ Simulations with self written codes and their verification by CFD software packages-
  ❖ Study of characteristics of flow through restriction orifice plates.
  ❖ Simulation of Hypersonic Turbulent Flows using Gas Kinetic BGK (Boltzmann Equation Based) methods.
  ❖ Comparison of various numerical approaches in capturing transition in turbulent flows.
  ❖ Performance analysis & parametric study of three tube Multi-effect Distillation (MED) system with possible solar hybridization & scale-up study for industrial prototype.

❖ Experimental fluid mechanics-
  ❖ Effect of downwash on the flow characteristics on Helo-deck & validation using CFD package.
  ❖ Parametric study of erosion wear due to solid-liquid mixture in Rotating wear test ring.
  ❖ Development of linear solar fresnel collection and its application in MED system.
Past Recruiters......

Placement Procedure

1- Contact professor-in-charge or placement officer, Training and Placement Cell for a Job Notification Form (JNF)

2- JNF requires details of the job offer – role offered, pay package, place of posting, eligible departments.

3- Once the filled-in-JNF with all the required details is received, companies are assigned username/password to access their online account at http://tnp.iitd.ac.in

4- Companies are also assigned space on the server on which they may upload any presentation, videos, data or other information they want the students to see.

5- The JNF has to be frozen on the T&P website by the company till a deadline, after which the students shall be able to view all the details, and the eligible students may apply.

6- After the application deadline for the students, the resumes are visible to the company. The company submits shortlist on its online account before a deadline.

7- Short-listed students get notified.

8- The placement office allots the dates for the campus interviews.

9- After the completion of the selection procedure on campus, company is required to announce the final list of the students on the same day itself.

10- If a student is selected, the job is registered against him/her and he/she would not be allowed to appear for more interviews as per placement policy.
Contact us

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