



Mechanical

Engineering Department

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The Department has an excellent reputation nationally and internationally and is consistently ranked the top undergraduate mechanical engineering program nationwide and the first choice of undergraduate and graduate candidates in the national entrance exam. The mission of the Department is to provide an excellent educational experience in mechanical engineering.

Undergraduate Course Structure

1st year	2nd year	3rd year	4th year
<ul style="list-style-type: none"> • Math (I), (II) • Physics (I), (II) • Physics Lab (I), (II) • General English • Physical Education (I) • Machinery Tool Workshop • Engineering Graphics (I), (II) • General Chemistry • Statics • Welding & Sheet Metals Workshop 	<ul style="list-style-type: none"> • Diff. Equations • Materials Science • Strength of Materials (I), (II) • Dynamics • Computer Programming • Physical Education (II) • Engineering Math. • Numerical Computations • Thermodynamics (I) • Fluid Mechanics (I) • Machine Element Design (I) 	<ul style="list-style-type: none"> • Thermodynamics (II) • Fluid Mechanics (II) • Fundamentals of Electrical Engineering (I) • Vibrations • Machine Element Design (II) • Strength of Materials Lab • Heat Transfer (I) • Automatic Control • Thermodynamics Lab • Fluid Mechanics Lab • Dynamics of Machinery • Fundamentals of Electrical Engineering (II) • One elective course 	<ul style="list-style-type: none"> • Auto Mechanics Workshop • Heat Transfer (II) • Dynamics & Vibration Lab • Fundamentals of Electrical Engineering Lab • Measurement & Control Systems • BSc Project • Five elective courses



Graduate Program

At MSc level, there are six options available to prospective students:

- Applied Mechanics,
- Production and Manufacturing
- Biomechanics
- Energy Conversion
- Marine Engineering
- Mechatronics

At PhD level, the department offers three options:

- Applied Mechanics
- Energy Conversion
- Marine Engineering

Graduate Research Fields

A broad range of research opportunities exists within the Department of Mechanical Engineering. Current fields of research are outlined below:

- Design and Fabrication of Micro- and Nanostructures
- Kinematics and Dynamics
- Condition Monitoring
- Energy Resources
- Nonlinear Sciences and Many-Body Systems
- Gas Turbine
- Turbocharger and Turbocharging
- The Internal Combustion Engines
- New Energy Conversion Systems
- Analytical and Computational Modeling of Nonlinear Continuum, Nano and Multi-Scale Structures
- Marine Engineering
- Intelligent Systems

- Manufacturing Process
- Fluxes Dynamics and Process Integration
- Surgical Robotics and Orthopedic Equipment
- Failure Analysis and Improvement
- Fluid Dynamics
- Energy Conversion and Power Generators
- Robotic Systems and Mechatronics
- Mechanics of Composite and FG Materials
- Two-Phase Flows
- Motion-Sport
- Biomechanics
- System Design and Automation
- Micro- and Nano-fluids
- Design and Analysis of Cable-Driven Robots
- Spine Biomechanics
- Fuel, Combustion and Emission
- Nano-robotics
- Nano Biotechnology and Tissue Engineering
- Process Control in Dynamic Systems, Energy and Biology

Moreover, the department accommodates three national centers of excellence :

- Center of Excellence in Design, Robotics and Automation
Director: Prof. Meghdari,
Tel: (+9821)66165541
- Center of Excellence for Energy Conversion
Director: Prof. M. H. Saidi
Tel: (+9821) 66165526

- Center of excellence in Dynamic and Hydrodynamics of Marine Vehicles
Director: Prof. M. S. Seif
Tel: (+9821)66165699

Career Opportunities

The mechanical engineering program at Sharif University of Technology provides the required education and training for a successful career both in industry and academia. Our alumni are among the most sought after engineers in the job market from all branches of industry including Automotive, Automation and Robotics, Chemical and Petrochemical, etc. Many of our graduates enter high ranking national and international graduate Departments to continue their academic education.



