Arizona State University offers the following graduate degrees in mechanical engineering:

**GRADUATE DEGREE PROGRAMS**

- Master of Science – Mechanical Engineering (Thesis; M.S.)
- Master of Science in Engineering – Mechanical Engineering (Non-thesis; M.S.E.)
- Doctor of Philosophy – Mechanical Engineering (Ph.D.)
- Doctor of Philosophy – Mechanical Engineering with an Engineering Education Concentration (Ph.D.)

Mechanical Engineering is ranked 38th nationally among public research institutions. Modern computational and laboratory facilities are available to support timely research investigations.

All graduate degree programs stress a sound foundation in technical fundamentals, communication and professionalism, along with access to several interdisciplinary programs. A broad-based curriculum is offered in design, systems and control, fluid mechanics science and engineering, mechanics and dynamics of solids, transport phenomena, thermodynamics and energy.

Arizona State University is an institution committed to excellence, access and impact. We measure ourselves by those we include, not by those we exclude.

With more than 68,000 students ASU boasts a student body as diverse as any in the nation, welcoming students from all 50 states and more than 100 nations around the globe. Our size is one of our advantages – it allows us to offer a broader range of learning experiences than most other universities.

ASU assumes major responsibility for the economic, social and cultural vitality of the communities that surround it. The university pursues research that is inspired by real-world application and contributes to the public good, blurring the boundaries that traditionally separate academic disciplines. By breaking the mold, ASU has become a place where local solutions have global impact.
Kyle D. Squires, Ph.D.
Director

Valana Wells, Ph.D.
Program Chair

Patrick Phelan, Ph.D.
Graduate Program Chair

Mechanical Engineering Graduate Faculty

Ronald Adrian
Turbulence, experimental fluid mechanics, laser diagnostics, laser instrumentation, micro detonation

Winslow Burleson
Human-Computer Interaction applied to: creativity, innovation, well-being, design engineering, exploration, gaming, educational technology

Ronald Calhoun
Remote sensing, doppler lidar, wind energy, air pollution

Shih-Hui (Joseph) Chao
Biosensors, genomics, extreme environments, diagnostics

Aditi Chattopadhyay
Adaptive structures, structural health monitoring, composites, multiscale analysis, multidisciplinary design optimization

Nikhilesh Chawla
Mechanical behavior of materials, failure analysis, nanoindentation

Kangping Chen
Fluid mechanics, hydrodynamics stability theory, interface phenomena, non-newtonian fluids, flow in porous media, drilling engineering, multiphase flow and heat transfer

Joseph Davidson
Kinematics, geometric tolerances, design

Jay Golden
Resilient and sustainable Infrastructures, remote sensing of engineered regions, human health vulnerability from the urban heat island effect, technology management, innovations, life cycle management, urban climate and energy

Marcus Herrmann
Fluid mechanics, modeling and numerical simulation of atomization processes in turbulent multiphase flows, numerical methods for discontinuous interfaces, Richtmyer-Meshkov instability, numerical methods for massively parallel computer systems, premixed and partially premixed combustion

Huei-Ping Huang
Geophysical and environmental fluid dynamics, numerical simulation, climate analysis and prediction

Hangqing Jiang
Solid mechanics, multiscale modeling and simulations, stretchable electronics, diffusion phenomena, thermodynamics, energy

Kamil Kaloush
Pavement materials design, characterization and thermal properties, advanced laboratory testing, field performance evaluation, maintenance and rehabilitation techniques, statistical analyses, modeling, neural network techniques

Taewoo Lee
Energy system analysis, thermal and fluid process characterization, fuel property measurements, combustion and its effects on environment, optical monitoring of thermofluid processes

Juan Lopez
Fluid dynamics, dynamical systems, computational sciences

Alex Mahalov
Nonlinear partial differential equations, dynamical systems, scientific computing, geophysical fluid dynamics and turbulence

Deirdre Meldrum
Automation in life Sciences, automation, micro- and nano technologies, microscale systems, lab-on-a-chip, single cell, genomics, robotics, control systems

Marc Mignolet
Vibrations, structural dynamics, random vibrations structural dynamics random loads and defects

Pavlos Mikellides
Space propulsion, plasma thrusters

Michele Milano
Optimization, bio-inspired propulsion systems, insect flight

Pedro Peralta
Mechanical properties of materials, fatigue and fracture in metals, shock loading

Patrick Phelan
Heat transfer, sustainable energy systems, nanoscale energy transport, urban heat island, transport phenomena, thermodynamics, and energy

Jonathan Posner
Low Reynolds number flow and transport at micro and nano scale, electrokinetics, chemi/bioanalytical devices, colloidal crystallization, precision biology, optical diagnostics and spectroscopy, and microfluidic and PEM fuel cells

Sangram Redkar
Nonlinear dynamics and controls, machine design, inertial navigation and GPS

Ramendra Roy
Thermodynamics, transport phenomena, gas turbine heat transfer

Veronica Santos
Hand biomechanics, neural control of movement, robotics, prosthetics, tactile sensors, stochastic modeling, and clinical applications of biomechanical modeling

Jami Shah
Geometric computing, design informatics

Karl Sieradzki
Mechanics and physics of solids, electrochemistry and alloy corrosion, thermodynamics of surfaces and thin film processes

Henry Sodano
Smart structures, vibration control, power harvesting, structural health monitoring, deployable satellites

Kyle Squires
Computational engineering, turbulence simulation and modeling, multiphase flows, engineering education, science, technology, engineering, mathematics (STEM) education and research

Thomas Sugar
Mechanical design, controls, robotics

Ampere Tseng
Manufacturing, micro- and nano-fabrication

Mark Van Schilfgaarde
Electronic structure, magnetism

Valana Wells
Rotorcraft aeroacoustics, high-speed rotorcraft design

Lun-Shin Yao
Heat transfer, fluid mechanics, thermodynamics, numerical methods