

MECHANICAL & AEROSPACE ENGINEERING, DOCTOR OF PHILOSOPHY

College of Engineering

The defining element of graduate study in the Mechanical & Aerospace Engineering Program is interdisciplinary design. Research within this graduate program advances design in diverse fields such as vehicles, plasma MHD propulsion, biomechanics, aerostructures, sensors, combustion, and energy systems. Graduate students acquire skills both to address fundamental issues in these areas and to design complex, multi-component systems. The highly collaborative environment fosters multidisciplinary research while drawing on the study of mathematics, experimental and space plasma science, electrical engineering, materials science, materials modeling, molecular dynamics and numerical analysis, bioengineering, space physics, and nanotechnology in addition to the core areas. Recruiters from industry are active here, knowing that, in addition to having hands-on design experience, our students are well grounded in engineering fundamentals. They study with professors who "wrote the book" on their discipline, and work on design projects with researchers who are international authorities in their field. Our graduate students are able to work closely with faculty in a friendly but demanding environment where teamwork and faculty mentoring are important, as is the cross-disciplinary, collaborative culture that is unique to UC Davis.

Research Highlights

- Aeronautics & Aerostructures
- Spacecraft Design & Operation
- Space Environmental Studies
- Remote Sensing
- Electrical Propulsion
- Flight Dynamics & Control
- Computational Fluid Dynamics
- Experimental MHD Turbulence Studies
- Dynamic Systems & Controls
- Robotics
- Materials Modeling
- Manufacturing & Mechanical Design
- Reacting Flows
- Heat Transfer
- Automotive System Dynamics
- Biosensors/Microelectromechanical Systems (MEMS)
- Molecular Self-Assembly
- Radiation Effects In Solids
- Nonlinear Dynamics & Phase-Locking
- Biofluid Mechanics
- Biosolid Mechanics
- Sports Biomechanics
- Energy Systems/Fuel Cell/Hybrid Vehicle Technology
- High Energy Density Science & Applications
- Nuclear Fusion Energy

- Wind Energy
- Solar Energy

Research Facilities & Partnerships

- Center for Computational Fluid Dynamics
- Institute of Transportation Studies
- Center for Advanced Highway Maintenance & Construction Technology
- GATE Center for Hybrid Electric Vehicles
- Western Cooling Efficiency Center
- Energy and Efficiency Institute
- HOME Space Technology Research Institute
- Aeronautical Wind Tunnel Facility

Complete Information on our website at Mechanical & Aerospace Engineering (<http://mae.ucdavis.edu/graduate/>).