Our Mission

Our mission in the Department of Aerospace Engineering is three-fold: education of the next generation of aerospace engineers and researchers for professional practice and leadership; research and development of next-generation technologies and systems; and service to Penn State, the profession, and society.

Degrees Awarded [2020-21]

- **158** TOTAL DEGREES IN AERO
- **127** Undergraduate
- **23** Master’s
- **8** Ph.D.

Faculty

- **22**

Enrollment

- **314** Undergraduate (third- and fourth-year students)
- **51** Master’s
- **63** Ph.D.

Fellows

- **13** Fellows
  - American Institute of Aeronautics and Astronautics: five Fellows, ten Associate Fellows
  - American Astronautical Society: three Fellows

- **10** Associate Fellows
  - AHS International: one Technical Fellow
  - American Physical Society: two Fellows
  - American Society of Mechanical Engineers: one Fellow
  - Human Factors and Ergonomics Society: one Fellow

Vertical Lift Research Center of Excellence

1 of only 3 in the U.S. dedicated to advancing vertical lift research and training of the next generation of vertical lift researchers.

Research Expenditures

- **$10.3 MILLION**
- **2020-21 Research Expenditures**
  - Research expenditures include subcontracts, externally, and internally funded projects.

AEROSPACE ENGINEERING
Research Labs and Facilities

- Adverse Environment Rotor Test Stand Facility
- Aeroacoustics Facilities
- Air Vehicle Intelligence and Autonomy Lab
- Control and Analysis of Stochastic Systems Lab
- High-Performance Computing Cluster Facility
- Indoor Flight Research Lab
- Robot Ethics and Aerial Vehicles Lab
- Rotorcraft Flight Simulator Facilities
- Sailplane Lab
- Space Propulsion Lab
- Structures Labs
- Student Space Programs Lab
- Turbomachinery Aero-Heat Transfer Lab
- Unmanned Aircraft Systems Research Lab
- Water Channel/Water Tunnel
- Wind Tunnels
- Wind Turbine Field Test Facility

Research Areas

- Aeroacoustics
- Air-Breathing Propulsion
- Astrodynamics
- Autonomous Flight and UAVs
- Computational and Experimental Fluid Dynamics
- Flight Science
- Human-Machine Integration
- Multifunctional Structures and Nanomaterials
- Rotorcraft Engineering
- Space Propulsion and Plasmas
- Structural Dynamics and Adaptive Structures
- Vehicle Dynamics and Control
- Vehicle Systems Engineering
- Wind Energy

Student Organizations

Students can join numerous engineering student organizations, many of which are dedicated to outreach and service.

- Aerospace Graduate Student Association
- Vertical Flight Society
- American Institute of Aeronautics and Astronautics
- Astrodynamics Research Group of Penn State
- LionTech Rocket Labs
- Penn State Lunar Lion
- Sigma Gamma Tau
- Student Space Programs Laboratory
- Tau Beta Pi
- Wind Energy Club

Degrees Offered

- Bachelor of Science in Aerospace Engineering (B.S.)
- Undergraduate Minor in Information Sciences and Technology for Aerospace Engineering
- Master of Engineering in Aerospace Engineering (M.Eng.)
- Master of Science in Aerospace Engineering (M.S.)
- Doctor of Philosophy in Aerospace Engineering (Ph.D.)
- Graduate Minor in Computational Science

Centers and Institutes

- Applied Research Lab
- Center for Acoustics and Vibration
- Center for Combustion Power and Propulsion
- Composites Manufacturing Technology Center
- Engineering Energy & Environmental Institute
- Institute for CyberScience
- Institutes of Energy and the Environment
- Materials Research Institute
- Rock Ethics Institute
- Sustainability Institute
- Vertical Lift Research Center of Excellence