The mission of the Department of Aerospace Engineering is to:

• Provide students with a quality undergraduate and graduate education for the State of Texas and the Nation through an innovative educational program
• Advance the science and aerospace engineering knowledge base through basic and applied research, inventions, technologies and solutions to aerospace problems
• Serve the aerospace engineering profession by preparing engineers for leadership in the creation, design and operation of the next generation aerospace engineering systems
At a Glance

Total Faculty 36
Professors 17
Associate Professors 10
Assistant Professors 3
Non-tenured/Non-tenure Track 6

Endowed Chair Holders 5
Endowed Professorship Holders 4
Development Professorship Holders 2
National Academy of Engineering Members 3

U.S. News & World Report rankings
Rankings Among Public Institutions

8 Undergraduate Programs
7 Graduate Programs

Research
$14.4M in research expenditures for FY 2010
Proposals submitted – 146
Awards – 108
$11.6M in research awards

Enrollment Fall 2010
Texas A&M Office of Institutional Studies and Planning
Undergraduate Students: 675
Graduate Students: 150
Aerospace Engineering

Academic Disciplines

Aerodynamics & Propulsion

Dynamics & Controls

Centers and Laboratories

AggieSat Lab Satellite Program
Air Force Office of Scientific Research Multidisciplinary University Research Initiative on Multifunctional Hybrid Composites
Autonomous Systems Laboratory
Consortium for the Advancement of Shape Memory Alloy Research and Technology (CASMART)
Center for Autonomous Space Systems (CASS)
Flight Mechanics Laboratory
Flight Research Laboratory
High-Performance Computing Laboratory
International Institute for Multifunctional Materials for Energy Conversion (IIMEC)
Klebanoff/Saric Wind Tunnel
Laboratory for Uncertainty Quantification
Land Air and Space Robotics Laboratory (LASR)
Laser Diagnostics and High-Speed Combustion Laboratory
Materials and Structures Laboratory
Multifunctional Materials Laboratory
NASA/Air Force National Hypersonics Science Center in Laminar-Turbulent Transition
National Aerothermochemistry Laboratory
Oran W. Nicks Low-Speed Wind Tunnel
Smart Vehicle Concepts Center (SVC)
Texas Institute for Intelligent Materials and Structures (TiiMS)
Vehicle Systems & Control Laboratory (VSCL)
Wave Propagation/Damping Laboratory

Research Areas

AERODYNAMICS AND PROPULSION
Aeronautics
Aerodynamics (airfoils/wings)
Aeroelasticity
Flow Control
Hypersonics
Laminar-Turbulent Transition
Propulsion (including Jet Engine, High-Speed Combustion, Laser Diagnostics)
Turbulence
Astronautics
Small-Satellite Design/Build/Fly
Space Weather
Spacecraft Propulsion

DYNAMICS AND CONTROLS
Aeroelasticity
Analytical Dynamics
Autonomous Intelligent Control
Autonomous Spacecraft Rendezvous, Docking and Service
Autonomous Systems
Cooperative Methods for Urban Search and Rescue (USAR)
Cyber-Physical Air, Space and Ground Systems
Design of In-Space Imaging Systems
Fault and Abort Tolerant Adaptive Control Systems
Formation Flying
Fusion of High Performance Sensors and Advanced Algorithms
Geometric Methods for Dynamical Systems
Ground-Based Emulation of Space Proximity Operations
Intelligent Cockpit Systems and Displays
Machine Learning and Computational Intelligence

Affiliated Center
Space Engineering Research Center (SERC)
Mission Analysis and Mission Design  
Morphing Air and Space Vehicles  
Modeling and Analysis of Systems with Delay  
Navigation Sensors  
Networked Control Systems  
Nonlinear Dynamics  
Orbit and Attitude Estimation  
Realtime/Anytime Path Planning  
Space Robotics  
Trajectory Optimization  
Unmanned Air Systems (UAS)  
Vision-based Navigation Systems

**MATERIALS AND STRUCTURES**  
Aeroelasticity of Wind Turbine Blades  
Composite Materials and Structures  
Computational Materials Science  
Computational Mechanics and Simulation  
Damage Mechanics  
Damping  
Discrete Dislocation Plasticity  
Dynamic Fracture  
Electroactive Polymers  
Ferroelectric Materials  
Fracture Mechanics  
Multiaxial Fatigue of Composite Structures  
Multifunctional Materials  
Nanocomposites  
Shape Memory Materials  
Smart Structures  
Structural Health Monitoring
Aerospace Facilities at Easterwood Airport
College Station, TX

Texas A&M University
Klebanoff-Saric Wind Tunnel

Very-low-disturbance flows
up to 80 mph

NASA Langley / Texas A&M
Mach 6 Quiet Tunnel
Long-duration, quiet
hypersonic wind tunnel

ACE Mach 5-8 Wind Tunnel
Hypersonic Shock Tunnel
Dynamic Stall Facility
Laser Diagnostics Development
Supersonic Basic Research Tunnel
Plasma Turbulence Research Tunnel
Turn-key commercial wind tunnel testing up to 200 mph

FLIGHT RESEARCH LABORATORY

Cessna O-2A Skymaster, Velocity XL-5RG and Stemme S-10V

6-DOF simulation of spacecraft dynamics for docking and maneuvering
I started working on a quadrotor last summer. Beginning with just aluminum tubing, some electronic pieces, and propellers, I built a fully functional fly by wire UAV. The learning experience has been amazing. It has encouraged me to be more attentive in class and has given me a great deal of confidence in my engineering abilities. I received a job this summer with the Air Force Flight Test Squadron at Edwards AFB in California. One of the biggest reasons I got the job was because of the interest I’d shown in the field by building and flight testing the quadrotor.

-Nate Miller: USRG participant working with Dr. John Whitcomb

TAMU Aerospace Engineering students get involved in research – even as undergraduates!
Senior Capstone Design Courses

DESIGN

BUILD

TEST

FLY
UNDERRGRADUATE MENTORING: STUDENTS HELPING STUDENTS.

“This program connected me with upperclassmen who gave me advice on courses, professors, research opportunities, and generally what I need to know to succeed in Aerospace.”
Go beyond. Get Involved.

AggieSat
Student Satellite Program

AIAA
American Institute of Aeronautics & Astronautics

Sigma Gamma Tau
National Aerospace Honor Society

SFTE
Society of Flight Test Engineers

SAE Aero Design
“Design, Build, Fly” Competition Team

And more...
How to Give
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For further information, please contact Jennifer Hester ’98, Director of Development j-hestert@tamu.edu 979.845.5113

Priority Funding Areas
• Aerospace Engineering Advisory Board Fund
• Aerospace Engineering Capstone Design Fund
• Aerospace Engineering Excellence Fund
• Aerospace Engineering General Scholarship Fund
• Aerospace Engineering Laboratory Enhancement Fund