

Aerospace Engineering

Degrees Offered: BS, MS, PhD

Average Starting Salary with BS: \$64,499

What Aerospace Engineers Do

Aerospace engineers work on the ground, in the air, and beyond our atmosphere. They work for very large companies designing jets and military aircraft, for small companies designing and flying personal aircraft, for automotive companies on aerodynamics, for government and military agencies, and a wide variety of other exciting careers.

Aerospace engineers research and develop environmentally clean energy and transportation systems, design, construct, test, or fly aircrafts, and work in the space industry on diverse projects like rockets, satellites, and shuttles or as an astronaut.

As an aerospace engineer, you'll be one of many engineers working to extend humanity's frontiers and develop a more complete understanding of our home planet. Few fields offer more fascinating or diverse career opportunities.

Facilities and Technology

- Gas dynamics and propulsion laboratory including a supersonic wind tunnel capable of producing flow speeds four times the speed of sound
- Senior and sophomore aircraft design laboratories
- Aerodynamic testing laboratory, including two subsonic wind tunnels
- Aerospace structures laboratory
- Flight-simulation facility, allowing six degrees-of-freedom aerodynamic modelling of any fixed-wing aircraft
- Space systems engineering laboratory
- Plasmadynamics laboratory
- Composite materials laboratory

Undergraduate research opportunities are available through the NASA Space Grant Consortium, CAMT and Missouri S&T's Opportunities for Undergraduate Research Experience program. Aerospace students can join student organizations such as Missouri S&T's chapter of the American Institute of Aeronautics and Astronautics, the Advanced Aero Vehicle Design

Team and the Missouri S&T chapter of the Society of Flight Test Engineers where they participate in a wide range of activities including seminars, research projects, design and competition and field trips to various companies in the aerospace industry.

Departmental Scholarship Information

Freshman scholarships are automatically awarded based on high school transcripts and ACT/SAT scores. No separate application is necessary. Scholarships ranging from \$500 to \$2,000 for sophomores, juniors and seniors typically require an application and are based on academic record, service activities and extracurricular activities.

Departmental Contact Information:

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Rolla, MO 65409
573-341-4661
mae.mst.edu
mae@mst.edu

Bachelor of Science

Aerospace Engineering128 credit hours

Entering freshmen desiring to study Aerospace Engineering are admitted to the Freshman Engineering Program. They may, however, state an Aerospace Engineering preference, which will be used as a consideration for available freshman departmental scholarships. The focus of the Freshmen Engineering program is on enhanced advising and career counseling, with the goal of providing to the student the information necessary to make an informed career decision.

FIRST YEAR Credit

Chemistry 1310, 1319, 1100-General Chemistry.....	6
English 1120-Exposition.....	3
FE 1100-Careers in Engineering.....	1
MechE 1720-Intro to Design Theory.....	3
Math 1214-Calculus for Engineers I.....	4
Math 1215-Calculus for Engineers II.....	4
Physics 1135-Engineering Physics I.....	4
Elective/History.....	3
Elective/Economics.....	3
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SECOND YEAR

AeroE 2360-Engineering Mechanics-Dynamics.....	3
AeroE 2861-Aero Vehicle Performance.....	3
AeroE 2780-Intro to Aerospace Design.....	2
CmpSci 1970 or 1971-Basic Scientific Programming.....	2
CmpSci 1980 or 1981-Computer Programming Lab.....	1
CivEng 2210-Mechanics of Materials.....	3
CivEng 2200-Engr Mech/Statics.....	3
Math 3304-Elementary Differential Equations.....	3
Math 2222-Calculus/Analytic Geometry III.....	4
MechE 2519-Thermodynamics.....	3
Physics 2135-Engineering Physics II.....	4
Elective/Literature.....	3
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THIRD YEAR

AeroE 3613-Aerospace Mechanics I.....	3
AeroE 3131-Aerodynamics I.....	3
AeroE 3251-Aerospace Structures I.....	3
AeroE 3361-Flight Dynamics and Control.....	3
AeroE 3171-Aerodynamics II.....	3
AeroE 4882-Exp Methods in Aero Engineering I.....	2
AeroE 3877-Principles of Engineering Materials.....	3
ElecE 2800-Electrical Circuits.....	3
Elective/Advanced Math or Comp Sci.....	3
Elective/Ethics.....	3
Elective/Communications.....	3
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FOURTH YEAR

AeroE 4535-Aircraft & Space Vehicle Propulsion.....	3
AeroE 4253-Aerospace Structures II.....	3
AeroE 4780 or 4790-Aero System Design I.....	2
AeroE 4781 or 4791-Aero System Design II.....	3
AeroE 4883-Exp Methods in Aero Engineering II.....	2
Elective/ Humanities or Soc Sci.....	3
Elective/Humanities or Soc Sci.....	3
Elective/Technical.....	3
Elective/Technical.....	3
Elective/Technical.....	3
Elective/Free.....	3
	<u>31</u>

All aerospace engineering students must take the Fundamentals of Engineering Examination prior to graduation. A passing grade is not required; however, this is the first step to becoming a registered professional engineer.