

Aeronautical/Aerospace Engineering

MEDIAN STARTING SALARY: \$64,200

MEDIAN INCOME: \$104,810



Aeronautical/aerospace engineers design and develop technology for commercial aviation, national defense, and space exploration. They may help design and manufacture military aircraft, missiles, and spacecraft. Within this field, they may specialize in the structure of the aircraft, aerodynamics, guidance and control, propulsion and design, manufacturing, or a certain type of aircraft. Commercial airliners, military aircraft, space shuttles, satellites, rockets, and helicopters are all within reach for talented aeronautical engineers, who may also be referred to as aeronautical, aviation, or rocket engineers.

Aeronautical/aerospace engineers work on the hundreds of satellites that orbit the earth and on the commercial and military aircraft that carry millions of passengers. Other areas of focus include developing materials that can withstand extreme temperatures, investigating biological implications of astronauts in space, and reducing the effects of sonic booms on the environment.

From the Wright brothers back in 1903 to the international space stations of today, aeronautical/aerospace engineering has enjoyed tremendous growth. The need for quieter, more fuel-efficient and alternative fuel commercial airplanes as well as the increased demand for spacecraft and helicopters will create many opportunities for aeronautical engineers. It is a very progressive and complex field that will undoubtedly continue to advance as we attempt to travel beyond the moon and explore the planets.

The automotive and sports science industries also need aeronautical engineers. All fifty states require registration of engineers whose work may affect lives, health, or property and engineers who offer their services to the public. Hence, professional registration is especially important for aeronautical/aerospace engineers. You can learn more about aeronautical/aerospace engineering by visiting the Aerospace Engineering Division website of the ASME at www.asme.org.

Job Outlook

Employment of aerospace engineers is expected to grow 5 percent from 2010 to 2020, slower than the average for all occupations. Some aerospace engineers work on projects that are related to national defense and thus require security clearances. These restrictions will help to keep jobs in the United States.

Industries with the highest levels of employment in this occupation:

1. Aerospace Product and Parts Manufacturing
2. Scientific Research and Development Services
3. Architectural, Engineering, and Related Services
4. Federal Executive Branch (OES Designation)
5. Navigational, Measuring, Electromedical, and Control Instruments Manufacturing

Top paying industries for this occupation:

1. Nonscheduled Air Transportation
2. Management, Scientific, and Technical Consulting Services
3. Communications Equipment Manufacturing
4. Employment Services
5. Federal Executive Branch (OES Designation)

Source: US Bureau of Labor Statistics

Glossary of Terms

Aerodynamics - a science that studies the movement of air and the way that objects (such as airplanes or cars) move through air (merriam-webster.com)

Aeronautics- the art or science of flight (merriam-webster.com)

Aerospace - an industry that deals with travel in and above the Earth's atmosphere and with the production of vehicles used in such travel (merriam-webster.com)

Alternative Fuel - a vehicular fuel that is not entirely derived from petroleum, as natural gas, hydrogen, or an alcohol mixture (Dictionary.com)

Aviation - airplane manufacture, development, and design (merriam-webster.com)

Design - to plan and make decisions about (something that is being built or created): to create the plans, drawings, etc., that show how (something) will be made (merriam-webster.com)

Fuel Efficient - producing power at a rate that is optimal with regard to the amount of fuel used by the vehicle (Dictionary.com)

International Space Station – a habitable artificial satellite that is the largest human object circling the earth and can at times been seen by the naked eye. (Wikipedia, 29 January 2014 at 17:47)

Guidance - the process of controlling the course of a projectile by a built-in mechanism (merriam-webster.com)

Manufacture - the process of making products especially with machines in factories (merriam-webster.com)

Propulsion - the force that moves something forward : the force that propels something (merriam-webster.com)

Sonic Boom - a very loud and explosive noise that is produced by an aircraft when it travels faster than the speed of sound (merriam-webster.com)

Wright Brothers - Orville (August 19, 1871 – January 30, 1948) and Wilbur (April 16, 1867 – May 30, 1912), were two American brothers, inventors, and aviation pioneers who were credited with inventing and building the world's first successful airplane and making the first controlled, powered and sustained heavier-than-air human flight, on December 17, 1903. (Wikipedia 29 January 2014 at 20:45)

ABET Accredited Programs in Aeronautical/Aerospace Engineering

School Name and Location	Website	Program and Degree Name
Arizona State University, Tempe, AZ, US	www.asu.edu	Aerospace Engineering, BSE
Auburn University, Auburn, AL, US	www.auburn.edu	Aerospace Engineering, BAE
California Polytechnic State University, San Luis Obispo San Luis Obispo, CA, US	www.calpoly.edu	Aerospace Engineering, BS
California State Polytechnic University, Pomona Pomona, CA, US	www.csupomona.edu	Aerospace Engineering, BS
California State University, Long Beach, Long Beach, CA, US	www.csulb.edu	Aerospace Engineering, BS
Case Western Reserve University, Cleveland, OH, US	www.case.edu	Aerospace Engineering, BS
Clarkson University, Potsdam, NY, US	www.clarkson.edu	Aeronautical Engineering, BS
Daniel Webster College, Nashua, NH, US	www.dwc.edu	Aeronautical Engineering, BS
Embry - Riddle Aeronautical University - Daytona Beach Daytona Beach, FL, US	www.db.erau.edu	Aerospace Engineering, BS
Embry-Riddle Aeronautical University - Prescott Prescott, AZ, US	prescott.erau.edu	Aerospace Engineering, BSAE
Florida Institute of Technology, Melbourne, FL, US	www.fit.edu	Aerospace Engineering, BS
Georgia Institute of Technology, Atlanta, GA, US	www.gatech.edu	Aerospace Engineering, BS
Illinois Institute of Technology, Chicago, IL, US	www.iit.edu	Aerospace Engineering, BS
Iowa State University, Ames, IA, US	www.iastate.edu	Aerospace Engineering, BS
Massachusetts Institute of Technology, Cambridge, MA, US	www.mit.edu	Aerospace Engineering - Information Technology, B.S.
Massachusetts Institute of Technology, Cambridge, MA, US	www.mit.edu	Aerospace Engineering, BS
Mississippi State University, Mississippi State, MS, US	www.msstate.edu	Aerospace Engineering, BS
Missouri University of Science and Technology, Rolla, MO, US	www.mst.edu	Aerospace Engineering, BS
New Mexico State University, Las Cruces, NM, US	www.nmsu.edu	Aerospace Engineering, BSAE
North Carolina State University at Raleigh, Raleigh, NC, US	www.ncsu.edu	Aerospace Engineering, BS
Oklahoma State University, Stillwater, OK, US	www.osu.okstate.edu	Aerospace Engineering, BSAE
Pennsylvania State University, University Park, PA, US	www.psu.edu	Aerospace Engineering, BS
Princeton University, Princeton, NJ, US	www.princeton.edu	Aerospace Engineering, BSE
Purdue University at West Lafayette, West Lafayette, IN, US	www.purdue.edu	Aeronautical and Astronautical Engineering, BS
Rensselaer Polytechnic Institute, Troy, NY, US	www.rpi.edu	Aeronautical Engineering, BS
Saint Louis University, St. Louis, MO, US	parks.slu.edu	Aerospace Engineering, BS
San Diego State University, San Diego, CA, US	www.sdsu.edu	Aerospace Engineering, BS
San Jose State University, San Jose, CA, US	www.sjsu.edu	Aerospace Engineering, BS
State University of New York at Buffalo, Buffalo, NY, US	www.buffalo.edu	Aerospace Engineering, BS
Syracuse University, Syracuse, NY, US	www.syr.edu	Aerospace Engineering, BS
Texas A&M University, College Station, TX, US	www.tamu.edu	Aerospace Engineering, BS
The Ohio State University, Columbus, OH, US	www.osu.edu	Aeronautical and Astronautical Engineering, BSAE
The University of Alabama, Tuscaloosa, AL, US	www.ua.edu	Aerospace Engineering, BSAE

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The University of Alabama in Huntsville, Huntsville, AL, US	www.uah.edu	Aerospace Engineering Option in Mechanical Engineering, BSE
The University of Alabama in Huntsville, Huntsville, AL, US	www.uah.edu	Aerospace Engineering Option in Mechanical Engineering, BSE
The University of Kansas, Lawrence, KS, US	www.ku.edu	Aerospace Engineering, BS
Tuskegee University, Tuskegee, AL, US	www.tuskegee.edu	Aerospace Science Engineering, BS
United States Air Force Academy, USAFA, CO, US	www.usafa.af.mil	Aeronautical Engineering, BS
United States Naval Academy, Annapolis, MD, US	www.usna.edu	Aerospace Engineering, BS
University of Arizona, Tucson, AZ, US	www.arizona.edu	Aerospace Engineering, BS
University of California, Davis, Davis, CA, US	www.ucdavis.edu	Aerospace Science and Engineering, BS
University of California, Irvine, Irvine, CA, US	http://www.uci.edu/	Aerospace Engineering, BS
University of California, Los Angeles, Los Angeles, CA, US	www.ucla.edu	Aerospace Engineering, BS
University of California, San Diego, La Jolla, CA, US	www.ucsd.edu	Aerospace Engineering, BS
University of Central Florida, Orlando, FL, US	www.ucf.edu	Aerospace Engineering, BS
University of Cincinnati, Cincinnati, OH, US	www.uc.edu	Aerospace Engineering, BS
University of Colorado at Boulder, Boulder, CO, US	www.colorado.edu	Aerospace Engineering Science, BS
University of Florida, Gainesville, FL, US	www.ufl.edu	Aerospace Engineering, BS
University of Illinois at Urbana - Champaign, Urbana, IL, US	www.illinois.edu	Aerospace Engineering, BS
University of Maryland College Park, College Park, MD, US	www.umd.edu	Aerospace Engineering, BS
University of Miami, Coral Gables, FL, US	www.miami.edu	Aerospace Engineering, BSASE
University of Michigan, Ann Arbor, MI, US	www.umich.edu	Aerospace Engineering, BSE
University of Minnesota - Twin Cities, Minneapolis, MN, US	www.umn.edu	Aerospace Engineering and Mechanics, BAEM
University of Notre Dame, Notre Dame, IN, US	www.nd.edu	Aerospace Engineering, BS
University of Oklahoma, Norman, OK, US	www.ou.edu	Aerospace Engineering, BS
University of Southern California, Los Angeles, CA, US	www.usc.edu	Aerospace Engineering, BS
University of Tennessee at Knoxville, Knoxville, TN, US	www.utk.edu	Aerospace Engineering, BS
University of Texas at Arlington, Arlington, TX, US	www.uta.edu	Aerospace Engineering, BS
University of Texas at Austin, Austin, TX, US	www.utexas.edu	Aerospace Engineering, BS
University of Virginia, Charlottesville, VA, US	www.virginia.edu	Aerospace Engineering, BS
University of Washington, Seattle, WA, US	www.engr.washington.edu	Aeronautical and Astronautical Engineering, BSAAE
Virginia Polytechnic Institute and State University Blacksburg, VA, US	www.vt.edu	Aerospace Engineering, BS
West Virginia University, Morgantown, WV, US	www.wvu.edu	Aerospace Engineering, BS
Western Michigan University, Kalamazoo, MI, US	www.wmich.edu	Aeronautical Engineering, BSE
Wichita State University, Wichita, KS, US	www.wichita.edu	Aerospace Engineering, BS
Worcester Polytechnic Institute, Worcester, MA, US	www.wpi.edu	Aerospace Engineering, BS