What can I do with a major in...

Aerospace engineering and mechanics

ACTIVITIES AEROSPACE ENGINEERING AND MECHANICS MAJORS DO:
Aerospace engineers design, develop, and test new technologies for use in aviation, defense systems, and space exploration, often specializing in areas such as structural design, guidance, navigation and control, instrumentation and communication, or production methods. They often use computer-aided design (CAD) software, robotics, and lasers and advanced electronic optics. They also may specialize in a particular type of aerospace product, such as commercial transports, military fighter jets, helicopters, spacecraft, or missiles and rockets. Aerospace engineers may be experts in aerodynamics, thermodynamics, celestial mechanics, propulsion, acoustics, or guidance and control systems. Aerospace engineers often apply their knowledge to related fields such as environmental engineering and mechanical engineering.

INDUSTRIES AEROSPACE ENGINEERING AND MECHANICS MAJORS WORK IN (SAMPLE LISTING):
Aircraft design  Aircraft parts manufacturing  National defense
Higher education  Space flight  Research
Marketing  Insurance  Rocketry
Consulting  Satellite design and construction  Propulsion engineering

EMPLOYERS WHO HIRE AEROSPACE ENGINEERING AND MECHANICS MAJORS (SAMPLE LISTING):
ATK  Federal Aviation Administration  NASA-Johnson Space Center
Boeing  FM Global  NAVAIR
Eaton Corporation  General Electric  Schlumberger
Emerson Process Management  Honeywell Aerospace  The Aerospace Corporation
ExxonMobil  Lockheed Martin  UTC Aerospace Systems
HUSCO International  Ford Motor Company

TYPES OF POSITIONS FOR AEROSPACE ENGINEERING AND MECHANICS MAJORS (SAMPLE LISTING):
- Development engineer: Applies research findings to develop new or improved products or manufacturing processes.
- Analytical engineer: Conducts in-depth assessments of proposed products and evaluates whether the design of each product meets customer requirements.
- Design engineer: Takes the concept or working model of a product to create a design that meets the customer’s requirements, industry standards, and can be manufactured economically.
- Test engineer: Designs and oversees the performance testing of products in wind tunnels and in actual flight.
- Project engineer: Plans, directs, and coordinates activities of company projects.
- Sales engineer: Contacts customers and makes sales presentations to demonstrate how products or services can fulfill their particular needs.
- Field service engineer: Examines performance reports on products and makes recommendations to solve problems.
- Systems engineer: Performs the requirements, analysis, and definition of the overall system and its subsystem.
- Materials engineer: Tests and evaluates materials, conventional or composite, used in aerospace structures.
- Manufacturing engineer: Plans the tooling, construction, and assembly of the product as dictated by the design specifications.

**Some of these positions may require an advanced degree.**
USEFUL WEBSITES FOR AEROSPACE ENGINEERING AND MECHANICS MAJORS:

Department of Aerospace Engineering and Mechanics  aem.umn.edu
National Aeronautics and Space Administration  nasa.gov
The Aerospace Corporation  aerospace.org
Aerospace-Technology  aerospace-technology.com

USEFUL WEBSITES FOR ENGINEERING MAJORS:

Engineer.net  engineer.net
Engineer Jobs  engineerjobs.com
Engineering Central  engcen.com
Graduating Engineer  graduatingengineer.com
ThinkJobs.com  thinkjobs.com
Engineering.com  engineering.com
Engineer Info  engineer.info

PROFESSIONAL ORGANIZATIONS:

AIAA (American Institute of Aeronautics and Astronautics)  aiaa.org
American Astronautical Society  astronomical.org
Aerospace Medical Association  asma.org
National Aeronautic Association  naa.aero
Aerospace Industries Association  aia-aerospace.org
Society of Flight Engineers  sfte.org
American Council of Engineering Companies  acec.org
American Council of Engineering Companies-MN chapter  acecmn.org
National Society of Professional Engineers  nspe.org
Minnesota Society of Professional Engineers  mnspe.org
Society of Women Engineers  swe.org

*Additional job/internship search websites and resources can be found at cse.umn.edu/career.

Information on this document was compiled from the Occupational Outlook Handbook, the Encyclopedia of Careers and Vocational Guidance, University of Minnesota departmental websites, AIAA, Career Opportunities in Aviation and the Aerospace Industry, and student-reported data.