



Educational Topic

Mechanical Engineer

Related Job Titles:

Mechanical systems engineer, aerospace engineer, materials engineer

Job Description:

Mechanical **engineers** plan and design engines, machines and other equipment. When designing a new product, **engineers** first figure out what it needs to do. They then design and test the parts, fit the parts together and test to see how successful it is. They also write reports on the product. Most **engineers** work in office buildings or laboratories. Some work outdoors at construction sites. Some must travel to different work sites.

Interests / Abilities:

- Are you good at math?
- Are you creative?
- Is your work detailed?
- Do you like to solve problems?
- Are you interested in how things work?
- Do you like working with computers?
- Are you good at working with a team?

Suggested School Subjects / Courses:

- Mathematics (**algebra, geometry, trigonometry, pre-calculus, calculus**)
- Science (**physics, biology, chemistry**)
- **Engineering (thermodynamics, fluid mechanics)**
- Computer programming
- Social studies (history)
- English (writing)

Education / Training Needed:

The minimum education required for this position is a **bachelor's degree in mechanical engineering** from an accredited **college or university**. To do research, a **Ph.D.** is highly desired for this position.

Areas of expertise:

- *Manufacturing:* design and update machines such as airplanes, robots, cars, etc.
- *Fluids:* design and build fluid flow systems or processes such as pipes
- *Biomedical:* design and develop instruments such as a heart pump for medical use
- *Systems:* design and analyze mechanical or **thermal** systems

Additional Resources:

- [Careers in Aviation/Aerodynamics](http://wings.ucdavis.edu/Careers/index.html)
<http://wings.ucdavis.edu/Careers/index.html>
- Order NASA career videos such as "Engineers: Turning Ideas into Reality," "Careers: Aerospace Engineer" or "Reaching for the Stars" from NASA CORE.
<http://core.nasa.gov>
- [Robotics Education](http://robotics.arc.nasa.gov)
<http://robotics.arc.nasa.gov>
- [Junior Engineering Technical Society](http://www.asee.org/jets)
<http://www.asee.org/jets>
- [Accreditation Board for Engineering and Technology, Inc.](http://www.abet.org)
<http://www.abet.org>
- [American Institute of Aeronautics and Astronautics](http://www.aiaa.org)
<http://www.aiaa.org>
- [Institute of Electrical and Electronics Engineers](http://www.ieee.org)
<http://www.ieee.org>
- [Student Educational Employment Programs](http://nasajobs.nasa.gov/stud_opps/employment/index.htm)
http://nasajobs.nasa.gov/stud_opps/employment/index.htm
- [NASA Jobs](http://nasajobs.nasa.gov/)
<http://nasajobs.nasa.gov/>
- [NASA Summer High School Apprenticeship Research Program \(SHARP\)](http://www.mtsibase.com/sharp/)
<http://www.mtsibase.com/sharp/>

What can I do right now?

- Participate in Bot-Ball or FIRST Robotics competitions see [Robotics Education](http://robotics.arc.nasa.gov)
<http://robotics.arc.nasa.gov>.
- Take as many math and science classes as you can.
- Participate in National Engineers Week.
- Participate in science fair projects.
- Visit [Astro-Venture](http://astroventure.arc.nasa.gov) regularly to participate in chats and activities.
<http://astroventure.arc.nasa.gov>
- Call the American Association of Science and Technology Centers for information on science museums in your area that you might visit. (202) 783-7200
- Order activity books, poster sets and **engineering** kits by writing to the Society of Manufacturing Engineers, One SME Drive, P.O. Box 930, Dearborn, MI 48121-0930.

-
- Please take a moment to evaluate this product at:
 - http://ehb2.gsfc.nasa.gov/edcats/educational_topic
 -
 - Your evaluation and suggestions are vital to continually improving NASA educational materials.
 - Thank you.
-



<http://quest.nasa.gov/people/index.html>

Mechanical Engineer

ET-2002-09-113-ARC