

Educational Topic

Chemical Engineer

Related Job Titles:

Organic Chemist, Polymer Chemist, Thermodynamicist, Fluid Dynamicist, Materials Engineer

Job Description:

Chemical Engineers use chemistry, engineering and physics to develop chemical products such as propulsion gases. When designing a new product, engineers first figure out what it needs to do. They then design and test the product. They also write reports on the product. Most Chemical Engineers work in office buildings or laboratories. 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
- English (writing)

Education / Training Needed:

The minimum education required for this position is a bachelor's degree in Chemical Engineering or a related subject 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 heating systems

Additional Resources:

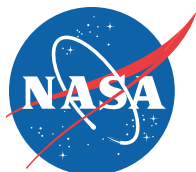
- Accreditation Board for Engineering and Technology, Inc.
<http://www.abet.org>
- American Chemical Society
<http://www.acs.org>
- American Institute of Chemical Engineers
<http://www.aiche.org>
- Astrobiology Summer Academy
<http://academy.arc.nasa.gov/>
- Chemical Engineers' Resource Page
<http://www.cheresources.com/indexzz.shtml>
- Earth to Orbit: Engineering Design Challenges
<http://eto.nasa.gov/>
- Graduate Student Researchers Program
<http://spacelink.nasa.gov/Instructional.Materials/NASA.Educational.Products/Graduate.Student.Researchers.Program.Brochure/.index.html>
- History of Chemical Engineering & Chemical Technology
http://www3.cems.umn.edu/~aiche_ug/history/h_intro.html
- Junior Engineering Technical Society
<http://www.asee.org/jets>
- MATHCOUNTS Competition
<http://mathcounts.org/>
- Minority University Research and Education Programs
<http://mured.nasaprs.com/>
- NASA Cooperative Education Program for college students
<http://spacelink.nasa.gov/Educational.Services/NASA.Education.Programs/Student.Support/NASA.Cooperative.Education.Program/.index.html>
- NASA Jobs
<http://nasajobs.nasa.gov/>

What can I do right now?

- Take as many math and science classes as you can.
- Participate in National Engineers Week.
- Participate in science fair projects.
- 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.

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- NASA SHARP Internship Program for high-schoolers
<http://www.mtsibase.com/sharp/>
 - NASA Student Employment
http://nasajobs.nasa.gov/stud_opps/employment/index.htm
 - NASA Student Involvement Program student contests
<http://www.nsip.net/index.cfm>
 - Revolutionary Vehicle Concepts and Systems student competition
<http://avst.larc.nasa.gov/competitions.html>
 - Student's Guide to Astrobiology
<http://www.astrobiology.com/student.html>
 - Tech-Interns.com
<http://www.tech-interns.com/>

- 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>

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