

Chemical Engineering

STARTING SALARY: \$65,403

MEDIAN INCOME: \$94,350



As creative and innovative problem solvers, chemical engineers enjoy great diversity in their intellectually challenging field. Chemical engineering offers one of the highest starting salaries of all the engineering disciplines. Everything that our senses enjoy consists of chemicals in one way or another. Chemical engineers have worked on creating the purple rose that has no thorns, the caramel on a caramel apple, and even your tennis shoes. The chemical engineering profession has improved water and waste systems, created new drugs and drug delivery systems, and improved the gas mileage of most transportation. Most chemical engineers work in manufacturing, pharmaceuticals, healthcare, design and construction, pulp and paper, petrochemicals, sports equipment design, food processing, specialty chemicals, microelectronics, electronic and advanced materials, polymers, business services, biotechnology, and the environmental health and safety industries.

Chemical engineers can choose from many specialties within the discipline. A chemical engineering student who picks a track in environmental engineering might be interested in reducing pollution or producing better food. Chemical engineers who focus on biomedical engineering are often called biochemical engineers; they may design new or improved artificial organs or they may work in the pharmaceutical industry. An athletic chemical engineer may be interested in working for a sporting goods company designing better rubber soles for basketball shoes. If you are more attracted to the big picture, you might see yourself looking for ways to streamline processes or increase safety with a specialty as a process design engineer.

Traditionally, chemical, petroleum, and pharmaceutical companies employed the bulk of the chemical engineering profession. Pharmaceutical companies still employ a large number of chemical engineers to research, develop, or design their product lines. Now, however, many chemical engineers work in biotechnology, material

Job Outlook

Employment of chemical engineers is projected to grow 4 percent from 2012 to 2022, slower than the average for all occupations. Demand for chemical engineers' services depends largely on demand for the products of various manufacturing industries.

Industries with the highest levels of employment in this occupation:

1. Architectural, Engineering, and Related Services
2. Basic Chemical Manufacturing
3. Scientific Research and Development Services
4. Resin, Synthetic Rubber, and Artificial Synthetic Fibers and Filaments Manufacturing
5. Petroleum and Coal Products Manufacturing

Top paying industries for this occupation:

1. Natural Gas Distribution
2. Management of Companies and Enterprises
3. Oil and Gas Extraction
4. Support Activities for Mining
5. Employment Services

Source: US Bureau of Labor Statistics

science (such as the plastics, rubber, ceramics, and metals industries), and electronics. The food industry, the Department of Energy, and the Environmental Protection Agency have also become prominent employers of chemical engineers.

Many chemical engineers have opted for careers in research. A chemical engineer who goes to medical school could become a medical doctor specializing in rare diseases or a medical researcher. A chemical engineer who goes to law school could be a patent attorney or a specialized attorney for a company that has invented a new drug or drug delivery system.

The American Institute of Chemical Engineers (AIChE) offers a student chapter to help students step gracefully into the real world of chemical engineering. Thousands of students across the nation participate in the organization at more than 150 campus locations. The organization supports students and encourages growth by offering numerous scholarships, competitions, and awards. Visit their website www.aiche.org and see for yourself all the benefits you can gain by joining this society. The site is packed with information, has profiles of what many chemical engineers do on a daily basis, and gives realistic career information.

Glossary of Terms

Biotechnology - the use of living cells, bacteria, etc., to make useful products (such as crops that insects are less likely to destroy or new kinds of medicine) (merriam-webster.com)

Design - to plan and make (something) for a specific use or purpose (merriam-webster.com)

Diversity - an instance of being composed of differing elements or qualities (merriam-webster.com)

Polymer - a chemical compound that is made of small molecules that are arranged in a simple repeating structure to form a larger molecule (merriam-webster.com)

ABET Accredited Programs in Chemical Engineering

School Name and Location	Website	Program and Degree Name
Arizona State University, Tempe, AZ, US	www.asu.edu	Chemical Engineering, BSE
Auburn University, Auburn, AL, US	www.auburn.edu	Chemical Engineering, BChE
Brigham Young University, Provo, UT, US	www.byu.edu	Chemical Engineering, BS
Brown University, Providence, RI, US	www.brown.edu	Chemical and Biochemical Engineering, BS
Bucknell University, Lewisburg, PA, US	www.bucknell.edu	Chemical Engineering, BS
California Institute of Technology, Pasadena, CA, US	www.caltech.edu	Chemical Engineering, BS
California State Polytechnic University, Pomona Pomona, CA, US	www.csupomona.edu	Chemical Engineering, BS
California State University, Long Beach, Long Beach, CA, US	www.csulb.edu	Chemical Engineering, BS
Carnegie Mellon University, Pittsburgh, PA, US	www.cmu.edu	Chemical Engineering, BS
Case Western Reserve University, Cleveland, OH, US	www.case.edu	Chemical Engineering, BS
Christian Brothers University, Memphis, TN, US	www.cbu.edu	Chemical Engineering, BS
City University of New York, City College, New York, NY, US	www.ccnyc.cuny.edu	Chemical Engineering, BE
Clarkson University, Potsdam, NY, US	www.clarkson.edu	Chemical Engineering, BS
Clemson University, Clemson, SC, US	www.clemson.edu	Chemical Engineering, BS
Cleveland State University, Cleveland, OH, US	www.csuohio.edu/engineering	Chemical Engineering, BS
Colorado School of Mines, Golden, CO, US	www.mines.edu	Chemical Engineering, BS
Colorado State University, Fort Collins, CO, US	www.colostate.edu	Chemical and Biological Engineering, B.S.
Columbia University, New York, NY, US	www.columbia.edu	Chemical Engineering, BS
Cooper Union, New York, NY, US	www.cooper.edu	Chemical Engineering, BS
Cornell University, Ithaca, NY, US	www.cornell.edu	Chemical Engineering, BS
Drexel University, Philadelphia, PA, US	www.drexel.edu	Chemical Engineering, BS
Florida A&M University, Tallahassee, FL, US	www.famu.edu	Chemical Engineering, BS
Florida Institute of Technology, Melbourne, FL, US	www.fit.edu	Chemical Engineering, BS
Florida State University, Tallahassee, FL, US	www.fsu.edu	Chemical Engineering, BS
Georgia Institute of Technology, Atlanta, GA, US	www.gatech.edu	Chemical and Biomolecular Engineering, BS
Hampton University, Hampton, VA, US	www.hamptonu.edu	Chemical Engineering, BS
Howard University, Washington, DC, US	www.howard.edu	Chemical Engineering, BS
Illinois Institute of Technology, Chicago, IL, US	www.iit.edu	Chemical Engineering, BS
Iowa State University, Ames, IA, US	www.iastate.edu	Chemical Engineering, BS
Kansas State University, Manhattan, KS, US	www.k-state.edu	Chemical Engineering, BS
Kettering University, Flint, MI, US	www.kettering.edu	Chemical Engineering, B.S.
Lafayette College, Easton, PA, US	www.lafayette.edu	Chemical Engineering, BS
Lamar University, Beaumont, TX, US	www.lamar.edu	Chemical Engineering, BS
Lehigh University, Bethlehem, PA, US	www.lehigh.edu	Chemical Engineering, BS
Louisiana State University and A&M College, Baton Rouge, LA, US	www.lsu.edu	Chemical Engineering, BS
Louisiana Tech University, Ruston, LA, US	www.latech.edu	Chemical Engineering, BS

Manhattan College, Riverdale, NY, US	www.manhattan.edu	Chemical Engineering, BS
Massachusetts Institute of Technology, Cambridge, MA, US	www.mit.edu	Chemical Engineering, BS
Miami University, Oxford, OH, US	www.muohio.edu	Chemical Engineering, BS
Michigan State University, East Lansing, MI, US	www.msu.edu	Chemical Engineering, BS
Michigan Technological University, Houghton, MI, US	www.mtu.edu	Chemical Engineering, BS
Mississippi State University, Mississippi State, MS, US	www.msstate.edu	Chemical Engineering, BS
Missouri University of Science and Technology, Rolla, MO, US	www.mst.edu	Chemical Engineering, BS
Montana State University - Bozeman, Bozeman, MT, US	www.montana.edu	Chemical Engineering, BS
New Jersey Institute of Technology, Newark, NJ, US	www.njit.edu	Chemical Engineering, BSChE
New Mexico Institute of Mining and Technology Socorro, NM, US	www.nmt.edu	Chemical Engineering, BS
New Mexico State University, as Cruces, NM, US	www.nmsu.edu	Chemical Engineering, BSChE
North Carolina Agricultural and Technical State University Greensboro, NC, US	www.ncat.edu	Chemical Engineering, BS
North Carolina State University at Raleigh, Raleigh, NC, US	www.ncsu.edu	Chemical Engineering, BS
Northeastern University, Boston, MA, US	www.northeastern.edu	Chemical Engineering, BS
Northwestern University, Evanston, IL, US	www.northwestern.edu	Chemical Engineering, BS
Ohio University, Athens, OH, US	www.ohiou.edu	Chemical Engineering, BS
Oklahoma State University, Stillwater, OK, US	www.osu.okstate.edu	Chemical Engineering, BSChE
Oregon State University, Corvallis, OR, US	www.oregonstate.edu	Chemical Engineering, BS
Pennsylvania State University, University Park, PA, US	www.psu.edu	Chemical Engineering, BS
Polytechnic Institute of New York University Brooklyn, NY, US	www.poly.edu	Chemical and Biological Engineering, BS
Polytechnic University of Puerto Rico, San Juan, PR, US	www.pupr.edu	Chemical Engineering, BS
Prairie View A&M University, Prairie View, TX, US	www.pvamu.edu	Chemical Engineering, BSChE
Princeton University, Princeton, NJ, US	www.princeton.edu/index.shtml	Chemical Engineering, BSE
Purdue University at West Lafayette, West Lafayette, IN, US	www.purdue.edu	Chemical Engineering, BS
Rensselaer Polytechnic Institute, Troy, NY, US	www.rpi.edu	Chemical Engineering, BS
Rice University, Houston, TX, US	www.rice.edu	Chemical Engineering, BSChE
Rose-Hulman Institute of Technology, Terre Haute, IN, US	www.rose-hulman.edu	Chemical Engineering, BS
Rowan University, Glassboro, NJ, US	www.rowan.edu	Chemical Engineering, BS
Rutgers, The State University of New Jersey New Brunswick, NJ, US	www.rutgers.edu	Chemical Engineering, BS
San Jose State University, San Jose, CA, US	www.sjsu.edu	Chemical Engineering, BS
South Dakota School of Mines and Technology Rapid City, SD, US	www.sdsmt.edu	Chemical Engineering, BS
Stanford University, Stanford, CA, US	www.stanford.edu	Chemical Engineering, BS
State University of New York at Buffalo, Buffalo, NY, US	www.buffalo.edu	Chemical Engineering, BS
Stevens Institute of Technology, Hoboken, NJ, US	www.stevens.edu	Chemical Engineering, BE
Stony Brook University, New York, NY, US	www.sunysb.edu	Chemical and Molecular Engineering, BE
Syracuse University, Syracuse, NY, US	www.syr.edu	Chemical Engineering, BS
Tennessee Technological University, Cookeville, TN, US	www.tntech.edu	Chemical Engineering, BS
Texas A&M University, College Station, TX, US	www.tamu.edu	Chemical Engineering, BS
Texas A&M University - Kingsville, Kingsville, TX, US	www.tamuk.edu	Chemical Engineering, BS
Texas Tech University, Lubbock, TX, US	www.texastech.edu	Chemical Engineering, BS

The Johns Hopkins University, Baltimore, MD, US	www.jhu.edu	Chemical and Biomolecular Engineering, BS
The Ohio State University, Columbus, OH, US	www.osu.edu	Chemical Engineering, BSChE
The University of Akron, Akron, OH, US	www.uakron.edu	Chemical Engineering, BS
The University of Alabama, Tuscaloosa, AL, US	www.ua.edu	Chemical Engineering, BSChE
The University of Alabama in Huntsville, Huntsville, AL, US	www.uah.edu	Chemical Engineering, BSE
The University of Kansas, Lawrence, KS, US	www.ku.edu	Chemical Engineering, BS
The University of Toledo, Toledo, OH, US	www.utoledo.edu	Chemical Engineering, BS
The University of Tulsa, Tulsa, OK, US	www.utulsa.edu	Chemical Engineering, BS
Trine University, Angola, IN, US	trine.edu/wearetrine	Chemical Engineering, BSChE
Tufts University, Medford, MA, US	www.tufts.edu	Chemical Engineering, BS
Tulane University, New Orleans, LA, US	www.tulane.edu	Chemical Engineering, BSE
Tuskegee University, Tuskegee, AL, US	www.tuskegee.edu	Chemical Engineering, BS
University of Arizona, Tucson, AZ, US	www.arizona.edu	Chemical Engineering, BS
University of Arkansas, Fayetteville, AR, US	www.uark.edu	Chemical Engineering, BS
University of California, Berkeley, Berkeley, CA, US	www.berkeley.edu	Chemical Engineering, BS
University of California, Davis, Davis, CA, US	www.ucdavis.edu	Chemical Engineering, BS
University of California, Irvine, Irvine, CA, US	http://www.uci.edu/	Chemical Engineering, BS
University of California, Los Angeles, Los Angeles, CA, US	www.ucla.edu	Chemical Engineering, BS
University of California, Riverside, Riverside, CA, US	www.ucr.edu	Chemical Engineering, BS
University of California, San Diego, La Jolla, CA, US	www.ucsd.edu	Chemical Engineering, BS
University of California, Santa Barbara, Santa Barbara, CA, US	www.ucsb.edu	Chemical Engineering, BS
University of Cincinnati, Cincinnati, OH, US	www.uc.edu	Chemical Engineering, BS
University of Colorado at Boulder, Boulder, CO, US	www.colorado.edu	Chemical Engineering, BS
University of Connecticut, Storrs, CT, US	www.uconn.edu	Chemical Engineering, BSE
University of Dayton, Dayton, OH, US	www.udayton.edu	Chemical Engineering, BChE
University of Delaware, Newark, DE, US	www.udel.edu	Chemical Engineering, BS
University of Florida, Gainesville, FL, US	www.ufl.edu	Chemical Engineering, BS
University of Houston, Houston, TX, US	www.uh.edu	Chemical Engineering, BSChE
University of Idaho, Moscow, ID, US	www.uidaho.edu	Chemical Engineering, BS
University of Illinois at Chicago, Chicago, IL, US	www.uic.edu	Chemical Engineering, BS
University of Illinois at Urbana - Champaign, Urbana, IL, US	www.illinois.edu	Chemical Engineering, BS
University of Iowa, Iowa City, IA, US	www.uiowa.edu	Chemical Engineering, BSE
University of Kentucky, Lexington, KY, US	www.uky.edu	Chemical Engineering, BSChE
University of Kentucky (Extended Campus-Paducah) Paducah, KY, US	www.uky.edu	Chemical Engineering, BSCME
University of Louisiana at Lafayette, Lafayette, LA, US	www.louisiana.edu	Chemical Engineering, BS
University of Louisville, Louisville, KY, US	www.louisville.edu	Chemical Engineering, BS
University of Maine, Orono, ME, US	www.umaine.edu	Chemical Engineering, BS
University of Maryland Baltimore County, Baltimore, MD, US	www.umbc.edu	Chemical Engineering, BS
University of Maryland College Park, College Park, MD, US	www.umd.edu	Chemical Engineering, BS
University of Massachusetts Amherst, Amherst, MA, US	www.umass.edu	Chemical Engineering, BS
University of Massachusetts Lowell, Lowell, MA, US	www.uml.edu	Chemical Engineering, BS
University of Michigan, Ann Arbor, MI, US	www.umich.edu	Chemical Engineering, BSE
University of Minnesota - Twin Cities, Minneapolis, MN, US	www.umn.edu	Chemical Engineering, BChE
University of Minnesota Duluth, Duluth, MN, US	www.d.umn.edu	Chemical Engineering, BSChE

University of Mississippi, University, MS, US	www.olemiss.edu	Chemical Engineering, BS
University of Missouri-Columbia, Columbia, MO, US	www.missouri.edu	Chemical Engineering, BSChE
University of Nebraska - Lincoln, Lincoln, NE, US	www.unl.edu	Chemical Engineering, BSCH
University of Nevada, Reno, Reno, NV, US	www.unr.edu	Chemical Engineering, BS
University of New Hampshire, Durham, NH, US	www.unh.edu	Chemical Engineering, BSChE
University of New Haven, West Haven, CT, US	http://www.newhaven.edu/8/	Chemical Engineering, BS
University of New Mexico, Albuquerque, NM, US	www.unm.edu	Chemical Engineering, BS
University of North Dakota, Grand Forks, ND, US	www.und.edu	Chemical Engineering, BS
University of Notre Dame, Notre Dame, IN, US	www.nd.edu	Chemical Engineering, BS
University of Oklahoma, Norman, OK, US	www.ou.edu	Chemical Engineering, BS
University of Pennsylvania, Philadelphia, PA, US	www.upenn.edu	Chemical and Biomolecular Engineering, BSE
University of Pittsburgh, Pittsburgh, PA, US	www.pitt.edu	Chemical Engineering, BS
University of Puerto Rico, Mayaguez Campus Mayaguez, PR, US	www.uprm.edu	Chemical Engineering, BS
University of Rhode Island, Kingston, RI, US	www.uri.edu	Chemical Engineering, BS
University of Rochester, Rochester, NY, US	www.rochester.edu	Chemical Engineering, BS
University of South Alabama, Mobile, AL, US	www.usouthal.edu	Chemical Engineering, BS
University of South Carolina, Columbia, SC, US	www.sc.edu	Chemical Engineering, BSE
University of South Florida, Tampa, FL, US	www.usf.edu	Chemical Engineering, BS
University of Southern California, Los Angeles, CA, US	www.usc.edu	Chemical Engineering, BS
University of Tennessee at Chattanooga, Chattanooga, TN, US	www.utc.edu	Chemical Engineering, BSChE
University of Tennessee at Knoxville, Knoxville, TN, US	www.utk.edu	Chemical Engineering, BS
University of Texas at Austin, Austin, TX, US	www.utexas.edu	Chemical Engineering, BS
University of Utah, Salt Lake City, UT, US	www.utah.edu	Chemical Engineering, BS
University of Virginia, Charlottesville, VA, US	www.virginia.edu	Chemical Engineering, BS
University of Washington, Seattle, WA, US	www.engr.washington.edu	Chemical Engineering, BSChE
University of Wisconsin - Madison, Madison, WI, US	www.wisc.edu	Chemical Engineering, BS
University of Wyoming, Laramie, WY, US	www.uwyo.edu	Chemical Engineering, BS
Vanderbilt University, Nashville, TN, US	www.vanderbilt.edu	Chemical Engineering, BE
Villanova University, Villanova, PA, US	www.villanova.edu	Chemical Engineering, BS
Virginia Commonwealth University, Richmond, VA, US	www.vcu.edu	Chemical and Life Science Engineering, BS
Virginia Polytechnic Institute and State University Blacksburg, VA, US	www.vt.edu	Chemical Engineering, BS
Washington State University, Pullman, WA, US	www.wsu.edu	Chemical Engineering, BS
Washington University, St. Louis, MO, US	www.wustl.edu	Chemical Engineering, BS
Wayne State University, Detroit, MI, US	www.wayne.edu	Chemical Engineering, BSChE
West Virginia University, Morgantown, WV, US	www.wvu.edu	Chemical Engineering, BS
West Virginia University Institute of Technology Montgomery, WV, US	www.wvutec.edu	Chemical Engineering, BS
Western Michigan University, Kalamazoo, MI, US	www.wmich.edu	Chemical Engineering, BSE
Widener University, Chester, PA, US	www.widener.edu	Chemical Engineering, BS
Worcester Polytechnic Institute, Worcester, MA, US	www.wpi.edu	Chemical Engineering, BS
Yale University, New Haven, CT, US	www.seas.yale.edu	Chemical Engineering, BS
Youngstown State University, Youngstown, OH, US	www.yzu.edu	Chemical Engineering, BE