

Major Possibilities: Chemistry and Biochemistry



Career Services

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Summary

- Southwestern's Chemistry and Biochemistry Department is accredited by the American Chemical Society (ACS) and offers an option for students to pursue an ACS-certified BS degree in chemistry, recommended for students wishing to enter graduate school in chemistry.
- The extra rigor and additional requirements of the ACS-certified degree are valued by potential employers and graduate schools alike. Employers realize that a certified graduate may have better preparation for technical employment.
- The biochemistry major is a better fit for students planning to go into pharmacy school or other fields in the health sciences.

Chemistry major synopsis

The flexibility of the chemistry degree program allows students to prepare for a number of career options including graduate or professional school, or obtaining a position in government or industry. In addition to their regular course work, chemistry majors are strongly encouraged to become involved in laboratory research during their junior and/or senior years. All chemistry majors are required to complete a capstone experience based on a laboratory research project. In addition, all chemistry majors must participate in a literature seminar course to prepare them for their capstone experience. Students can earn either a BA or BS in chemistry, depending on which supporting courses the students take.

Biochemistry major synopsis

The biochemistry curriculum is designed to guide students in developing a strong foundation in the fundamentals of chemistry and biology. It is shaped by suggestions of the educational division of the American Society for Biochemistry and Molecular Biology (ASBMB) for an undergraduate curriculum leading to a major in biochemistry and consists of 9 chemistry courses and 5 biology courses, along with other supporting courses from the mathematics and physics departments. Biochemistry majors must participate in research, either at Southwestern University or at another institution, to fulfill their capstone requirements. The education biochemistry majors receive will equip them with the skills and understanding needed for graduate study in chemistry, biochemistry, molecular biology or a related area. Graduates may also choose to pursue a career in industry or one of the health-related professions.

Sample job titles

Government

Agricultural Research Service
Centers for Disease Control and Prevention
Food and Drug Administration
National Aeronautics and Space Administration
National Bureau of Standards
National Institute of Health
Nuclear Regulatory Commission
State Environmental Management Agencies
U.S. Department of Agriculture
U.S. Department of Defense
U.S. Department of Energy Labs
U.S. Department of Health and Human Services
U.S. Environmental Protection Agency

Service and Education

Environmental Engineering Firms
Lab Technologist for a University
Universities and Colleges
Waste Treatment Facilities

Industry and Commerce

Agricultural Products Co.
Beverage Manufacturers
Biotechnology Firms
Chemical Manufacturers
Chemical Patent Attorney
Electronics Companies
Food Manufacturers
Oil and Gas Co.
Paint Manufacturers
Pharmaceutical Manufacturers
Plastics Manufacturers
Pulp and Paper Companies
Rubber and Detergent Manufacturers
Salesperson
Specialty Chemical Co.
Textile Companies

Sample internship employers of SU students

Baylor Medical Center
Bexar County Forensic Toxicology Lab
Exxon Mobil Patient Services - Irving
Federal Bureau of Investigations

FDA Office of Orphan Products Development – Washington, D.C.
REU with NSF Chemistry Research Program (UNT)
Sun Star Geriatrics Healthcare

Possible internship sites

Abbot Laboratories
CDS International - Germany
Center for Science in the Public Interest
Genentech - Oceanside, CA

National Institutes of Health
SMART Program – Southwestern University
Union Carbide – Houston, TX

Sample full-time employers of SU grads

Chemist (Celanese)
Chemist (DHL Analytical, Inc.)
Clinical Research Coordinator
Dental Assistant (Brazos Valley Pediatric Dentistry)
Laboratory Technician (Iso-Text Diagnostics)
Pharmacy Technician (Kroger Pharmacy)

Pharmacy Technician (Seton Hospital Network)
Quality Analyst (Colgate-Palmolive Co.)
Research & Development Chemist (Lamberti USA)
Research Technician (UT Southwest Medical Center)
Wastewater Operator (Pflugerville Utilities)

Professional associations

American Association for Clinical Chemistry: www.aacc.org
American Chemical Society: <http://portal.acs.org/portal/acs/corg/content>
American Institute of Chemists: www.theaic.org
American Society for Biochemistry and Molecular Biology: www.asbmb.org
Materials Research Society: <http://www.mrs.org>
Society of Environmental Toxicology and Chemistry: www.setac.org

Additional Web resources

BioLink: <http://www.bio-link.org/jobLinks.htm>
BIOSIS: www.biosis.org
Chemical Week: www.chemweek.com
Nature: www.nature.com
Science Careers: <http://recruit.sciencemag.org>
Science Jobs: www.sciencejobs.com
Southwestern's Chemistry and Biochemistry Web page: <http://www.southwestern.edu/departments/chemistry/>
The Chemical Engineer: www.tcetoday.com
Undergraduate Research Experience: http://www.nsf.gov/crssprgm/reu/reu_search.cfm

Career Services resources

Career Opportunities in Forensic Science
Career Opportunities in Science
Careers in Alternative Medicine
Careers in Social and Rehabilitation Services
Chemical Careers in Brief
Childbirth Instructor Magazine Guide to Careers in Birth
Children's Health Care
Earthwatch Institute: 2008 Expedition Guide
Exploring Health Care Careers (Vols. 1 & 2)
Great Jobs for Biology Majors
Great Jobs for Chemistry Majors
Health Professions: Career and Education Directory
Master of Acupuncture and Med. Oriental Program
Medical and Pharmaceutical Sales
Opportunities in Animal and Pet Care Careers
Opportunities in Biological Science Careers
Opportunities in BioTechnology Careers
Opportunities in Chemistry Careers
Opportunities in Dental Care Careers

Opportunities in Eye Care Careers
Opportunities in Forensic Science Careers
Opportunities in Gerontology and Aging Careers
Opportunities in Medical Sales Careers
Opportunities in Nursing Careers
Opportunities in Occupational Therapy
Opportunities in Pharmacy Careers
Opportunities in Physical Therapy Careers
Opportunities in Physician Assistant Careers
Opportunities in Research and Development
Opportunities in Speech-Language Pathology
Opportunities in Veterinary Medicine Careers
Top 20 Biotechnology & Pharmaceutical Firms
Pharmaceutical Industry Guide: Drug Cos., Biotech Firms & CROs
Pharmaceutical/Medical Representatives
Planning Your Career in Alternative Medicine
Resource Guide to Careers in Toxicology
Vault Career Guide to Biotech
Winning the Games Scientist Play