



CHEMISTRY

Program Objectives

The field of chemistry is concerned with the structure of matter, its transformations, and the energy changes related to these transformations. Departmental aims are to contribute to the student's understanding of chemistry's place within the sciences and in today's industrial and business world, and to provide students concentrating in this field with a thorough and practical education that will be useful in teaching or in industrial, technical, or graduate work.

To achieve these aims the Department of Chemistry offers a four-year program with three tracks leading to baccalaureate degrees. Because the chemistry courses in each track are the same for the first two years, it is possible to switch tracks through the junior year. Students considering a chemistry major are strongly urged to consult with a member of the Department of Chemistry faculty to discuss the total program.

Degrees & Concentrations Offered

Graduation Planner: usm.maine.edu/advising/degreeplanning

Degrees Offered: BA in Chemistry, BA in Chemistry with Concentration in Secondary Education, BS in Biochemistry, BS in Chemistry

Minors Offered: Minor in Biochemistry, Minor in Chemistry

Department of Chemistry

Portland Campus, 370 Science Building
(207) 780-4232

Web Address: usm.maine.edu/chy

Career Possibilities*

Biochemical Engineers Biochemists and Biophysicists
Chemical Technicians Chemical Engineers Chemists
Chemistry Teachers, Postsecondary
Chemical Plant and System Operators
Food Scientists and Technologists
Forensic Science Technicians Medical and Clinical Laboratory Techs
Nuclear Monitoring Technicians
Pharmacists
Pharmacy Technicians
Secondary School Teachers
Soil and Plant Scientists Quality Control Analysts

* Additional education, training or experience may be required.

Acquired Transferable Skills

Active Learning & Listening
Complex Problem Solving
Critical Thinking
Category Flexibility
Solving Problems
Leadership
Mathematical Reasoning
Oral Expression
Written Comprehension

For more information on transferable skills go to:
usm.maine.edu/community-engagement-career-development/career-tools

What can I do with this major?*

AREA	EMPLOYERS	INFORMATION/STRATEGIES
Any Chemistry Product Development Analysis Quality Control	Government Agencies Industries Private research labs Colleges & universities	<ul style="list-style-type: none"> • Develop strong verbal, written, teamwork and problem-solving skills. • Choose courses with laboratory components to build skills. • Consider taking a course in grant writing. • Earn master's degree in chemistry for advancement.
Organic Pharmaceuticals Fuels And Energy Food Science Consumer Products	Gov. agencies: Dept. of Energy, Dept. of Agriculture, EPA. Industries: Food, pharmaceutical, petroleum, chemical, rubber, plastics, detergents, paints, dyes.	<ul style="list-style-type: none"> • Develop effective technical laboratory skills for work with instruments including chromatography, spectroscopy, nuclear magnetic resonance. • Knowledge of computer programs with 3d modeling capabilities helps. • Seek chemistry-related research experience through work with professors, co-ops, internships or part-time jobs.
Biochemistry Healthcare Pharmaceuticals Environment/ Agriculture Food Science	Gov. agencies: CDC, EPA, FDA, Dept. of Ag Food Safety & Inspection Service. Industries: Food, pharmaceutical, healthcare, chemical, animal feed.	<ul style="list-style-type: none"> • Consider taking courses to specialize in biology, molecular biology, genetics, biophysics or biophysical methods, as this field is often linked to other disciplines. • Seek undergraduate research opportunities with professors.
Chemical Eng. Bulk & Fine Chemicals Consumer Products Biotechnology Environ. Safety & Health Fuels and Energy	Gov. agencies: Dept. of Energy, Dept. of Agriculture, Nuclear Regulatory Commission, EPA. Industries: Food, pharmaceutical, petroleum, automotive, pulp & paper, electronics, energy.	<ul style="list-style-type: none"> • Consider double majors in chemistry and engineering. • Pursue experimental design, data interpretation and problem solving competence through courses & research with professors. • Seek internship or co-op experiences in the field. • Join professional associations to maintain current knowledge.

*To learn about these areas and much more visit: whatcanidowiththismajor.com/major • © 2011 What Can I Do With This Major

Enrichment Opportunities

Internships

Various Faculty Research Programs:
usm.maine.edu/chy/undergraduate-research-chemistry
usm.maine.edu/cecd

Study Abroad

For more information contact the USM Office of International Programs.
usm.maine.edu/international/study-abroad

Clubs & Organizations

[Chemistry Club](#). For a complete list of student organizations:
webapp.usm.maine.edu/pathways/list

USM Corporate Partners

The USM Corporate Partners are over 350 business people, from nearly 100 companies. usm.maine.edu/corporatepartners

Helpful Career Links

USM Career Connections:

USM's career network for job and internship searches. usm.maine.edu/community-engagement-career-development/usmcareerconnections

O*NET OnLine:

Learn more about a career opportunity by researching it with O*NET. onetonline.org

Occupational Outlook Handbook:

Learn more about a career opportunity by researching it with OOH. bls.gov/ooH

PROFESSIONAL ASSOCIATIONS To name a few...

[American Chemical Society](#)

[American Academy of Forensic Science](#)

[American Society for Biochemistry and Molecular Biology](#)

[Biotechnology Industry Organization](#)

[Crop Life](#)

[American Institute of Chemical Engineers](#)

[American Society for Materials International](#)

