Chemistry

FROM STUDY TO SKILLS

All academic programs offered at the UM help students develop valuable transferable skills. Chemistry has been called “the central science” because of its impact on and connection to all other scientific disciplines, from engineering to life sciences. As a Chemistry major, you will learn to observe nature closely, ask questions about your observations, and then develop experiments to answer those questions. Thus, a degree in Chemistry will prepare you to apply fundamental analytic and problem-solving skills across a wide range of professions.

Related fields include Physics, Math, Biology, Pharmacy, Medicine, Nursing, Public Health, Environmental Sciences, Engineering, Statistics, and Computer Science.

SKILLS AND ABILITIES

Analytical Skills
Summarizing research findings
Attending to details
Analyzing data
Testing hypotheses
Developing theories
Clarifying problems
Identifying relationships between problems and solutions
Reasoning by analogy
Perceiving patterns and structures
Applying logic to problems
Evaluating results

Investigative Skills
Remaining objective
Reviewing relevant data
Applying concepts
Utilizing formulae
Researching information
Observing carefully
Asking questions
Designing experiments
Applying knowledge creatively

Technical Skills
Processing data
Solving quantitative problems
Tabulating data
Sampling for surveys
Using laboratory equipment
Maintaining precision and accuracy

Communication Skills
Writing clearly
Explaining complex ideas for technical and nontechnical audiences
Organizing and reporting data
Designing charts/graphs
Reporting results and conclusions orally and in writing
Presenting alternative explanations

BUILDING YOUR SKILLS OUTSIDE THE CLASSROOM

Employers seek out individuals who can demonstrate excellent verbal and written communication skills, teamwork and interpersonal skills, initiative, and a strong work ethic. The Chemistry Department provides numerous ways for undergraduates to get extensive research experience. Student organizations and campus employment offer additional valuable opportunities to add to the skills you are developing in your classes. Other options include study abroad, off-campus employment or volunteering in the community. Finally, a summer internship may be the best way of all to test out a career field and develop marketable skills.
FROM SKILLS TO CAREER

As a Chemistry concentrator you will develop both general and technical skills applicable to a wide range of careers. For example, close attention to detail and accuracy may be equally useful whether working as a research chemist for a pharmaceutical company, a patent lawyer, or an editor at a scientific publication. Many concentrators go on to graduate or professional school. The list below is a sample of careers undertaken by Chemistry graduates.

Analytical Skills
- Laboratory manager
- Hospital administrator
- Information systems manager
- Bioinformatics researcher
- Pharmaceutical research chemist
- Patent lawyer
- Physician
- Programmer/analyst
- Research scientist
- Analytical chemist
- Market research analyst
- Sales manager
- Biochemist

Investigative Skills
- Regulatory chemist
- Safety inspector
- Agronomist
- County health department inspector
- Water works supervisor
- Quality assurance manager
- Federal drug administration inspector
- Sewer system supervisor
- OSHA enforcement agent
- Environmental risk assessor
- Environmental compliance officer
- Forensic scientist
- Industrial hygienist

Technical Skills
- Art conservator
- Veterinarian
- Toxicologist
- Radiation health specialist
- Nurse-anesthetist
- Pathologist
- Medical examiner
- Serologist
- Polymer chemist
- Textile dyes analyst
- Flavorist
- Chemical engineer
- Hazardous materials manager

Communication Skills
- College instructor
- Science teacher, K-12
- Scientific editor/writer
- Museum education coordinator
- Chemical information specialist

= Further Study Required
= Green Jobs

For more career information, see O*Net at http://online.onetcenter.org/

CONCENTRATION REQUIREMENTS

The department offers majors in Chemistry and Biochemistry. Complete information on course offerings and requirements may be found on the Chemistry website or the LSA Bulletin. Prerequisites include two years of chemistry and mathematics and one year of physics.

NEXT STEPS / RESOURCES

To visit the Chemistry Department career page of internship, jobs, and graduate school information: http://www.umich.edu/~michchem/undergrad/gradplan.html

To begin connecting to professionals in fields that interest you, create your own LinkedIn account: www.careercenter.umich.edu/students/networking/linkedin_intro.html

To identify internships or job opportunities, visit Career Center Connector: www.careercenter.umich.edu/c3student/

On campus jobs (work-study and non work-study jobs) are listed at: https://studentemployment.umich.edu/JobX_Home.aspx

Maize Pages list hundreds of organizations for students to get involved in: http://studentorgs.umich.edu/maize

Volunteer Connection lists volunteer opportunities in local organizations: http://volunteer-connection.umich.edu/

The Career Center
3200 Student Activities Building
734-764-7460
www.careercenter.umich.edu
www.facebook.com/careercenter.umich
http://twitter.com/careercenter