



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 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.

Department of Chemistry

Student Administrative Assistant
1500 Chemistry Building
734-647-2858
umich.edu/~michchem

Newnan Advising Center

1255 Angell Hall
734-764-0332
lsa.umich.edu/advising

NEXT STEPS / RESOURCES

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

To begin connecting to professionals in fields that interest you, create your own LinkedIn account: careercenter.umich.edu/article/getting-started-linkedin

To identify internships or job opportunities, visit Career Center Connector: careercenter.umich.edu/article/c3

On campus jobs (work-study and non work-study jobs) are listed at:

studentemployment.umich.edu/JobX_Home.aspx

Maize Pages list hundreds of organizations for students to get involved in: maizepages.umich.edu

Connect to Community lists volunteer opportunities in local organizations: connect2community.umich.edu

The Career Center

3200 Student Activities Building
734-764-7460
careercenter.umich.edu
facebook.com/careercenter.umich
twitter.com/careercenter
linkedin.com/company/the-career-center-at-the-university-of-michigan

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