



2023-2024 Academic Year

Chemistry

Associate in Science Degree in Liberal Arts and Sciences (A.S.)

B-STEM Division

Business, Science, Technology, Engineering and Math

[609.570.3482](tel:609.570.3482) admiss@mccc.edu

The **Chemistry** option of the Liberal Arts and Sciences program prepares students for transfer into baccalaureate programs leading to careers in fields such as pharmaceuticals, industrial chemistry, chemical engineering, chemical sales and service, environmental technology, food science, medicine, and education.

Chemistry graduates have transferred to institutions throughout the region, including Rutgers University, Rider University, The College of New Jersey, Temple University, Rowan University, and more. Graduates earning a four-year degree have secured employment in local laboratories including those of Bristol-Myers Squibb, Johnson & Johnson, New Jersey State Police, Medical Diagnostics Laboratory (MDL), Genesis Biotechnology Group (GBG), and elsewhere.

Students routinely use electronic balances; IR, UV, visible and NMR spectrophotometers; pH meters; GC; calorimeters; lasers; and other electronic devices in the laboratory. Computer applications for data collection and analysis are introduced in the General Chemistry sequence. Other software packages assist students with the mastery of concepts and problem-solving skills.

Second-year courses introduce specialized instrumentation for chromatographic separations and spectroscopic identification of compounds using gas chromatographs and infrared spectrophotometer. MCCC and Rider University are principal partners in a National Science Foundation project to give Mercer students Internet access to Rider's 300Mz FT-NMR for spectral analyses. An honors sequence allows students to conduct research under the supervision of Rider University or Princeton University faculty as well as at other research institutions.

PROGRAM OUTCOMES

- Demonstrate an understanding of the fundamental principles, concepts, and terminology of chemistry;
- Develop a working knowledge of chemical principles and methods including problem solving, analytical reasoning, and laboratory skills;
- Utilize critical thinking, qualitative, and quantitative reasoning skills to organize, evaluate, and interpret data, expressing the results in a clearly written laboratory report or oral presentation;
- Conduct literature searches and communicate findings orally and in writing;

- Plan, execute, and interpret an experiment according to the Scientific Method using proper scientific and laboratory safety procedures and maintaining an accurate and complete laboratory notebook.

Part-time evening study is encouraged for those who are currently employed. Course selection and program of study must be approved by an academic advisor.

Admission to the Chemistry option requires a high school diploma or equivalent with at least one year of science (biology, chemistry, or physics) and two years of academic mathematics. Students who complete the Chemistry option earn the Associate in Science degree in Liberal Arts and Sciences.

DEGREE CURRICULUM

2023-2024 Academic Year

CHEM.AS

CIP 240101

The course sequence below represents a recommended example of how this degree program can be completed in two years, presuming a Fall Term start and satisfaction of all Developmental Studies (foundation courses) requirements and prerequisites. Actual approaches toward completion depend on each student's anticipated transfer institution, career objectives, or other individual circumstances.

Students are encouraged to meet regularly with an academic advisor or Success Coach to consider options, establish plans, and monitor progress.

| Code | Course (lecture/lab hours) | Credits | To Do This Semester |
|-------------------------|-----------------------------------|---------|---|
| FIRST SEMESTER | | | |
| ENG 101 | English Composition I (3/0) | 3 | ✓ Meet with your faculty advisor to complete an academic plan. Make sure you are aware of any course prerequisites you may need to take, and how long it will take to complete your degree. |
| CHE 101 | General Chemistry I (3/3) | 4 | |
| CMN 111 | Speech: Human Communication (3/0) | 3 | |
| | OR | | |
| CMN 112 | Public Speaking (3/0) | 4 | |
| — — | Technical elective | | |

✓ Use your online tools: Check your [MercerMail](#) daily, utilize features of Office 365, and get to know [Student Planning](#).

- Select from any 200-level Biology (BIO), Chemistry (CHE), or Physics (PHY) course; BIO 101, 102; COS 101, 102; PHY 101, 102, 115.

✓ Take advantage of [Learning Centers](#) or [Online Tutoring](#) to support your studies and assignments.

SECOND SEMESTER

[ENG 102](#) English Composition II (3/0)

3

✓ Transitioning to college can be challenging. Meet with your [Success Coach](#) for guidance and support.

[CHE 102](#) General Chemistry II (3/3)

4

— — Technical elective

4

✓ Apply for [financial aid](#) by May 1.

- Select from any 200-level Biology (BIO), Chemistry (CHE), or Physics (PHY) course; BIO 101, 102; COS 101, 102; PHY 101, 102, 115.

✓ Contact professors with questions and use their office hours to develop a connection.

— — [Humanities general education elective](#)

3

✓ Apply for Continuing Student scholarships at www.mccc.edu/m-scholarships.

✓ Begin attending college transfer events and visit campuses. Be sure to visit the [Transfer Services](#) and [Career Services](#) offices to get to know how the transfer process works and to explore career options.

✓ Plan for how you will complete transfer applications while finishing your classes.

THIRD SEMESTER

[CHE 201](#) Organic Chemistry I (3/4)

5

✓ Keep in contact with each professor and your faculty advisor. Make sure

[MAT 151](#) Calculus I for the Mathematical and Physical Sciences

4

| | | | |
|-----|---|---|--|
| — — | Technical elective | 4 | <p>you are on track to graduate.</p> <p>✓ Complete your applications to desired transfer institutions.</p> |
| | <ul style="list-style-type: none"> Select from any 200-level Biology (BIO), Chemistry (CHE), or Physics (PHY) course; BIO 101, 102; COS 101, 102; PHY 101, 102, 115. | | |
| — — | <u>Social Science general education elective</u> | 3 | <p>✓ Develop team and leadership skills by getting involved in activities and clubs.</p> <p>✓ Manage your stress! Take advantage of the MCCC pool, Fitness Center, free yoga and Zumba. Reach out for counseling or other support if you need it. Your Success Coach can connect you with resources.</p> |

FOURTH SEMESTER

| | | | |
|----------------|---|-----------|--|
| <u>CHE 202</u> | Organic Chemistry II (3/4) | 5 | ✓ Apply for financial aid by May 1. |
| <u>MAT</u> — | Mathematics elective | 4 | ✓ Talk to your faculty advisor and the Transfer office for advice on how to successfully transition to a new school. |
| | <ul style="list-style-type: none"> Select from MAT 152, 201, 208, 251, 252. | | |
| — — | Technical elective | 4 | ✓ Apply for Graduating Student scholarships at www.mccc.edu/m-scholarships . |
| | <ul style="list-style-type: none"> Select from any 200-level Biology (BIO), Chemistry (CHE), or Physics (PHY) course; BIO 101, 102; COS 101, 102; PHY 101, 102, 115. | | |
| — — | <u>Social Science or Humanities general education elective</u> | 3 | |
| | | 60 | |

NOTE: Chemistry majors must earn a minimum grade of C in all CHE courses.