

Chemistry

Associate in Science Degree in Liberal Arts and Sciences

Program **CHEM.AS**
CIP 240101



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.

Curriculum

Code	Course (lecture/lab hours)	Credits
FIRST SEMESTER		
ENG 101	English Composition I (3/0)	3
CHE 101	General Chemistry I (3/3)	4
CSW 100	College Success and Personal Wellness (2/0)†	2
— —	Technical elective ¹	4
— —	General Education elective ²	3
SECOND SEMESTER		
ENG 102	English Composition II (3/0)	3
MAT 146	Pre-Calculus (4/0)	4
CHE 102	General Chemistry II (3/3)	4
CMN 111	Speech: Human Communication (3/0) OR	3
CMN 112	Public Speaking (3/0)	3
— —	Technical elective ¹	4
THIRD SEMESTER		
CHE 201	Organic Chemistry I (3/4)	5
MAT —	Mathematics elective ³	4
— —	Technical elective ¹	4
— —	General Education elective ²	3
FOURTH SEMESTER		
CHE 202	Organic Chemistry II (3/4)	5
MAT —	Mathematics elective ³	4
— —	Technical elective ¹	4
— —	General Education elective ²	3
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¹ Select from approved list of CHE, BIO, MAT, PHY, and COS courses, available from Business & STEM division office or program coordinator.

² Select course from either Social Science or Humanities general education categories.

³ Select from MAT 151, 152, 201, 251, 252.

† Some exemptions apply. Consult academic advisor for details.

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

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.

NOTE: All program listings are subject to periodic updates. Please consult your program advisor, academic division, or www.mccc.edu/programs_degree