



### WHAT YOU WILL LEARN

The study of chemistry opens doors to satisfying careers and to a professional life in which the tendency to ask “why” can lead to rewarding endeavors.

Chemistry is a versatile subject area and the pursuit of a career in chemistry can be a most intellectually satisfying experience; no other basic science touches and shapes as many aspects of modern society as chemistry.

From soft contact lenses and synthetic blood to alternative fuel sources and biotechnology, the study of chemistry has provided the solution to complex problems and has improved the quality of all phases of human life.

The core courses required for the Associate of Science (A.S.) degree at CCM prepare the student to transfer to a four-year institution and earn a B.S. or B.A. degree; to attend health-related professional schools in medicine, dentistry, pharmacy, physical therapy and chiropractic; or to start a career in chemistry.

### WHY STUDY CHEMISTRY AT CCM?

The chemistry program at CCM provides students with a strong foundation in all areas of modern chemistry. This degree is also appropriate for students interested in the applications of chemistry to environmental issues. Class sizes are small and students receive individual attention as well as supplemental help and free tutoring, if needed.

#### Facilities

- Our laboratory facilities include not only standard lab equipment, but the most modern instrumentation including:
  - › Benchtop nuclear magnetic resonance (NMR)
  - › Gas (GC) and liquid chromatography (HPLC)
  - › Atomic absorption (AA)
  - › UV and visible spectroscopy
  - › Infrared spectroscopy (FTIR)
  - › Electrophoresis (HPCE)
  - › Polymerase chain reaction (PCR)
  - › Fourier transform infrared spectroscopy (FTIR)

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### CAREERS

Chemists and Biochemists provide the backbone for many industries such as manufacturing, environmental, government and health, studying substances at the atomic and molecular levels and analyzing the ways in which the substances interact with one another.

Overall employment is projected to grow 6 percent from 2020 to 2030 with about 9,100 openings for chemists and materials scientists are projected annually.

- Dentistry
- Environmental protection
- Environmental science
- Food industry
- Geology
- Medicine
- Pharmaceuticals
- Pharmacy
- Polymers
- Regulatory agencies

### CONTACT INFORMATION

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- In the course of their studies, students will use laboratory instrumentation to analyze real-world samples. Class sizes are small and students receive individual attention as well as supplemental help and free tutoring, if needed.

### Faculty

The faculty are committed to providing quality education and maintain close relationships with students throughout their educational experience. Many faculty members have had industrial and research experience and have published articles in peer-reviewed journals. In addition, many belong to professional organizations including the American Chemical Society, The American Society for Microbiology and the Metropolitan Association of College and University Biologists.

Several faculty members have been nominated or won the National Institute for Staff and Organizational Development Excellence Award.

### Teacher Education - Chemistry

- Students in this program plan to transfer to a four-year program that will prepare them to teach at the elementary to high school levels.
- The Teacher Education Program includes 10 other areas of specialization. Faculty advisors from both the chemistry and education departments advise students in this program as it is within a larger, multidisciplinary program, TECHM.

## WHERE YOU CAN GO!

CCM credits from the Chemistry Program are readily transferrable towards four-year Chemistry and other degrees at many state and private colleges and universities. CCM has Chemistry articulation agreements with:

- Drew University
- Rider University
- Saint Elizabeth University
- West Virginia University
- William Paterson University

Students interested in transferring to other colleges should meet with an academic advisor as well as confer with the Office of Transfer Services to learn about transfer programs.

Students who are preparing for pharmacy, medical, dental or veterinary schools should see an academic advisor in the Department of Biology & Chemistry to plan their choice and sequencing of courses. Students should also see an academic advisor in the Department of Biology & Chemistry to ensure the proper sequencing of required and elective courses to assure transferability.

## CURRICULUM

### General Education Foundation (32 CR)

#### COMMUNICATION (6 CR)

English Composition I	ENG 111	3
English Composition II	ENG 112	3

#### MATH/SCIENCE/TECHNOLOGY (11 CR)

Precalculus	MAT 123	4
Biology or Physics Elective		4
Math/Science/Technology Elective		3

#### SOCIAL SCIENCE (3 CR)

Choose from General Education course list (Social Science)		3
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#### HUMANITIES (3 CR)

Choose from General Education course list (Humanities)		3
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#### SOCIAL SCIENCE OR HUMANITIES (3 CR)

Choose from General Education course list (Social Science or Humanities)		3
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#### GENERAL EDUCATION ELECTIVES (6 CR)

Choose from General Education course list		3
		3

### CHEMISTRY CORE (28 CR)

General Chemistry I Lecture	CHM 125	3
General Chemistry I Lab	CHM 126	1
General Chemistry II Lecture	CHM 127	3
General Chemistry II Lab	CHM 128	1
Organic Chemistry I Lecture (Fall)	CHM 231	3
Organic Chemistry I Lab (Fall)	CHM 232	1
Organic Chemistry II Lecture (Spring)	CHM 233	3
Organic Chemistry II Lab (Spring)	CHM 234	1
Biology or Physics Elective		4
Analytic Geometry and Calculus I	MAT 131	4
RESTRICTED ELECTIVE (4 CR)		4

### TOTAL

**60**

*Note: You must see a faculty advisor to plan your sequence of courses. For the most up-to-date listing of courses, see the Curriculum Checklist for this program on the CCM website at [www.ccm.edu/checksheets](http://www.ccm.edu/checksheets).*