

# CHEMICAL TECHNOLOGY

CCRI offers a certificate and an associate in applied science degree in Chemical Technology. Either program can be taken on a part- or full-time basis, but the program is designed to allow students to fit their education into their busy lives. It is recommended that all students initially enroll in the certificate program because employers often do not discriminate between certificate- and degree-holding job candidates. Students can continue on to earn the associate in applied science degree. The A.A.S. degree in Chemical Technology transfers to most four-year institutions as the first two years of a traditional baccalaureate program in Chemistry.

For more information contact Program Coordinator Wayne Suits at 401-825-2010 or wsuits@ccri.edu.

## Programs

- Chemical Technology - Associate in Applied Science (<https://catalog.ccri.edu/programs-study/chemistry/chemical-technology-aas/>)
- Chemical Technology - Certificate (<https://catalog.ccri.edu/programs-study/chemistry/chemical-technology-certificate/>)

## Courses

### CHMT 1120 - Chemical Technology I (6 Credits)

This course is an introduction to basic concepts in chemistry. The course covers chemical properties, identification and separation of substances, atomic and molecular structure, elements and compounds, liquids and solutions; the periodic table and the naming of inorganic substances. Students will use a variety of instruments including the gas chromatograph, manometers, analytical balances and visible spectrophotometers.

Lecture: 2 hours, Lab: 8 hours

#### Course completes the following requirements:

Gen.Ed. Ability 3A

Gen.Ed. Ability 3B

Lab Science Requirement

URI/RIC Transfer General Education Transfer Opportunity: Yes

### CHMT 1121 - Chemistry for Biotechnology (3 Credits)

This course provides an introduction to basic concepts in chemistry and instruction in the use of instruments, including gas and liquid chromatographs, electronic balance, visible spectrophotometers and pH meters. Topics covered include chemical properties, identification and separation of substances, atomic structure, elements and compounds, gases and solutions, acids and bases and amino acids and proteins.

Lecture: 2 hours, Lab: 3 hours

### CHMT 1220 - Chemical Technology II (6 Credits)

This course is a continuation of Chemical Technology I and covers acid-base chemistry, equilibrium, qualitative and quantitative analysis.

Lecture: 2 hours, Lab: 8 hours

**Prerequisite(s):** CHMT 1120

#### Course completes the following requirements:

Lab Science Requirement

### CHMT 2321 - Chemical Technology III (5 Credits)

This course covers all forms of gravimetric, volumetric, and spectrophotometric analyses. Students will also be reintroduced to atomic absorption spectrophotometry during analysis of aqueous metal and heavy metal samples.

Lecture: 2 hours, Lab: 6 hours, Other: 0 hours

**Prerequisite(s):** CHMT 1220

#### Course completes the following requirements:

Lab Science Requirement

### CHMT 2322 - Chemical Technology IV (5 Credits)

This course covers an introduction to organic chemistry via a study of organic functional groups, classification of organic compounds using wet and instrumental methods and organic reactions. It will also focus on infrared spectrophotometry separation methods, including gas chromatography and high pressure liquid chromatography.

Lecture: 2 hours, Lab: 6 hours, Other: 0 hours

**Prerequisite(s):** CHMT 2321

#### Course completes the following requirements:

Lab Science Requirement

### CHMT 2421 - Chemical Technology V<sup>A</sup> (8 Credits)

This course is a continuation of Chemical Technology IV and covers the nature of reversible processes, equilibrium constants, solute and solvent systems and the kinetics of chemical reactions. Instrumental methods used include atomic absorption, emission spectroscopy, ultraviolet and NMR spectroscopy. The course concludes with a variety of special methods and student projects.

Lecture: 4 hours, Lab: 8 hours

**Prerequisite(s):** CHMT 2322

#### Course completes the following requirements:

Lab Science Requirement