

# CMT

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## Courses

### **CMT 111 Chemical Technology 1**

**1 Credit. 0 Lecture Hour. 3 Lab Hours.**

A course on fundamental concepts and techniques in chemical technology. Topics include: the chemical technology major at Cincinnati State, career development, professional communication, chemical technicians' roles in industry, using Microsoft Office Suite, industrial/laboratory safety and hygiene, and laboratory statistics.

Prerequisites: None

### **CMT 112 Chemical Technology 2**

**1 Credit. 0 Lecture Hour. 3 Lab Hours.**

A continuation of CMT 111. Topics include: maintenance, calibration, and use of laboratory glassware and equipment; solution preparation skills; laboratory math and statistics; and using computers for data analysis.

Prerequisites: CMT 111

### **CMT 171 Chemical Operator 1**

**4 Credits. 3 Lecture Hours. 2 Lab Hours.**

A course on the Process Industry and the roles and responsibilities of Process Technicians. Topics include: applied chemistry and physics; process industry equipment; occupational safety; and skills and attitudes needed to succeed as a Process Technician.

Prerequisites: None

### **CMT 172 Chemical Operator 2**

**4 Credits. 3 Lecture Hours. 2 Lab Hours.**

A continuation of CMT 171, emphasizing chemical systems and operational processes and responsibilities of a Process Technician. Topics include: instrumentation, systems used in process technology operations, process documentation (P&ID's and PFDs), start-up and shut-down requirements, and process operator responsibilities.

Prerequisites: CMT 171

### **CMT 191 Part-Time Cooperative Education 1: Chemical Technology**

**1 Credit. 1 Lecture Hour. 20 Lab Hours.**

Students seeking an associate's degree participate in their first part-time field learning experience related to their degree. Students are expected to register for academic courses during the same semester. Students must follow cooperative education policies and procedures to earn credit. Grades issued are Satisfactory or Unsatisfactory.

Prerequisites: None

### **CMT 192 Part-Time Cooperative Education 2: Chemical Technology**

**1 Credit. 1 Lecture Hour. 20 Lab Hours.**

Students seeking an associate's degree participate in their second part-time field learning experience related to their degree. Students are expected to register for academic courses during the same semester. Students must follow cooperative education policies and procedures to earn credit. Grades issued are Satisfactory or Unsatisfactory.

Prerequisites: CMT 191

### **CMT 193 Part-Time Cooperative Education 3: Chemical Technology**

**1 Credit. 1 Lecture Hour. 20 Lab Hours.**

Students seeking an associate's degree participate in their third part-time field learning experience related to their degree. Students are expected to register for academic courses during the same semester. Students must follow cooperative education policies and procedures to earn credit. Grades issued are Satisfactory or Unsatisfactory.

Prerequisites: CMT 192

### **CMT 194 Part-Time Cooperative Education 4: Chemical Technology**

**1 Credit. 1 Lecture Hour. 20 Lab Hours.**

Students seeking an associate's degree participate in their fourth part-time field learning experience related to their degree. Students are expected to register for academic courses during the same semester. Students must follow cooperative education policies and procedures to earn credit. Grades issued are Satisfactory or Unsatisfactory.

Prerequisites: CMT 193

### **CMT 195 Part-Time Cooperative Education 5: Chemical Technology**

**1 Credit. 1 Lecture Hour. 20 Lab Hours.**

Students seeking an associate's degree participate in their fifth part-time field learning experience related to their degree. Students are expected to register for academic courses during the same semester. Students must follow cooperative education policies and procedures to earn credit. Grades issued are Satisfactory or Unsatisfactory.

Prerequisites: CMT 194

### **CMT 196 Part-Time Cooperative Education 6: Chemical Technology**

**1 Credit. 1 Lecture Hour. 20 Lab Hours.**

Students seeking an associate's degree participate in their sixth part-time field learning experience related to their degree. Students are expected to register for academic courses during the same semester. Students must follow cooperative education policies and procedures to earn credit. Grades issued are Satisfactory or Unsatisfactory.

Prerequisites: CMT 195

### **CMT 198 First Year Special Topics in Chemical Technology**

**1-9 Credits. 0 Lecture Hour. 0 Lab Hour.**

A course on selected topics related to Chemical Technology, which gives students opportunities to study information not currently covered in other courses. Grades issued are A, B, C, D, or F.

Prerequisites: Instructor Approval

### **CMT 199 First Year Independent Project in Chemical Technology**

**1-9 Credits. 0 Lecture Hour. 0 Lab Hour.**

A project related to Chemical Technology that is completed by one or more students to meet specific educational goals. Projects must have prior approval and supervision by Chemical Technology faculty. Grades issued are Satisfactory or Unsatisfactory.

Prerequisites: Instructor Approval

### **CMT 220 Analytical Chemistry**

**4 Credits. 3 Lecture Hours. 3 Lab Hours.**

A course on quantitative and qualitative chemical analysis with emphasis on wet chemical techniques. Topics include: sample preparation; volumetric, gravimetric, electrochemical, and separation methods; and statistical treatment of data.

Prerequisites: CMT 112, CHE 122, and CHE 132

**CMT 230 Chemical Instrumental Analysis****4 Credits. 3 Lecture Hours. 3 Lab Hours.**

A course on quantitative and qualitative chemical analysis. Topics include: instrumental techniques, electrochemistry, atomic and molecular spectroscopy, gas and liquid chromatography, mass spectrometry, and statistical treatment of data.

Prerequisites: CMT 220

Corequisites: CMT 285: Chemical Research

**CMT 285 Chemical Research****1 Credit. 1 Lecture Hour. 0 Lab Hour.**

Students apply knowledge of instrumental analysis to complete an independent research project, including developing a procedure, performing necessary testing, applying statistical techniques, and incorporating the data into a formal report and oral presentation.

Prerequisites: CMT 220

Corequisites: CMT 230: Chemical Instrumental Analysis

**CMT 291 Full-Time Cooperative Education 1: Chemical Technology****2 Credits. 1 Lecture Hour. 40 Lab Hours.**

Students seeking an associate's degree participate in their first full-time field learning experience related to their degree. Students must follow cooperative education policies and procedures to earn credit. Grades issued are Satisfactory or Unsatisfactory.

Prerequisites: None

**CMT 292 Full-Time Cooperative Education 2: Chemical Technology****2 Credits. 1 Lecture Hour. 40 Lab Hours.**

Students seeking an associate's degree participate in their second full-time field learning experience related to their degree. Students must follow cooperative education policies and procedures to earn credit. Grades issued are Satisfactory or Unsatisfactory.

Prerequisites: CMT 291

**CMT 293 Full-Time Cooperative Education 3: Chemical Technology****2 Credits. 1 Lecture Hour. 40 Lab Hours.**

Students seeking an associate's degree participate in their third full-time field learning experience related to their degree. Students must follow cooperative education policies and procedures to earn credit. Grades issued are Satisfactory or Unsatisfactory.

Prerequisites: CMT 292

**CMT 294 Internship 1: Chemical Technology****2 Credits. 1 Lecture Hour. 40 Lab Hours.**

Students seeking an associate's degree participate in their first unpaid field learning experience related to their degree. Students must follow applicable policies and procedures to earn credit. Grades issued are Satisfactory or Unsatisfactory.

Prerequisites: CMT 111

**CMT 295 Internship 2: Chemical Technology****2 Credits. 1 Lecture Hour. 40 Lab Hours.**

Students seeking an associate's degree participate in their second unpaid field learning experience related to their degree. Students must follow applicable policies and procedures to earn credit. Grades issued are Satisfactory or Unsatisfactory.

Prerequisites: CMT 294

**CMT 298 Second Year Special Topics in Chemical Technology****1-9 Credits. 0 Lecture Hour. 0 Lab Hour.**

A course on selected topics related to Chemical Technology, which gives students opportunities to study information not currently covered in other courses. Grades issued are A, B, C, D, or F.

Prerequisites: Instructor Approval

**CMT 299 Second Year Independent Project in Chemical Technology****1-9 Credits. 0 Lecture Hour. 0 Lab Hour.**

A project related to Chemical Technology that is completed by one or more students to meet specific educational goals. Projects must have prior approval and supervision by Chemical Technology faculty. Grades issued are Satisfactory or Unsatisfactory.

Prerequisites: Instructor Approval