

# CRL: CHEMISTRY LAB

*College of the Sciences and Mathematics*

## Courses

### **CRL 103. General Chemistry I Lab. 1 Credit.**

Basic laboratory studies in college chemistry utilizing the quantitative approach. Semimicro qualitative analysis and inorganic preparations.

Pre / Co requisites: CRL 103 requires a prerequisite or corequisite CHE 103.

Typically offered in Fall, Spring & Summer.

### **CRL 104. General Chemistry II Lab. 1 Credit.**

Basic laboratory studies in college chemistry utilizing the quantitative approach. Semimicro qualitative analysis and inorganic preparations.

Pre / Co requisites: CRL 104 requires a prerequisite of CRL 103 and a prerequisite/corequisite of CHE 104.

Typically offered in Fall, Spring & Summer.

### **CRL 107. General Chemistry Lab for Allied Health Sciences. 1 Credit.**

A one-semester laboratory course to complement CHE 107. Basic laboratory techniques, both qualitative and quantitative, will be used to illustrate principles from the lecture. CHE 107 must be taken concurrently or before CRL 107.

Pre / Co requisites: CRL 107 requires a corequisite of CHE 107.

Typically offered in Fall, Spring & Summer.

### **CRL 199. Transfer Credits. 1-10 Credits.**

Transfer Credits.

Repeatable for Credit.

### **CRL 230. Introduction to Organic and Biological Chemistry Lab. 1 Credit.**

A laboratory course to allow students in the environmental health program to gain hands-on experience with the topics and techniques of organic and biochemistry as they apply to the environmental health major.

Pre / Co requisites: CRL 230 requires a prerequisite or corequisite of CHE 230.

Typically offered in Fall.

### **CRL 231. Organic Chemistry I Lab. 2 Credits.**

Basic laboratory skills in organic chemistry including classical as well as instrumental techniques. Organic synthesis and modern spectrophotometric methods of identification.

Pre / Co requisites: CRL 231 requires a prerequisite of CRL 104.

Typically offered in Fall, Spring & Summer.

### **CRL 232. Organic Chemistry II Lab. 2 Credits.**

Basic laboratory skills in organic chemistry including classical as well as instrumental techniques. Organic synthesis and modern spectrophotometric methods of identification.

Pre / Co requisites: CRL 232 requires a corequisite of CHE 232.

Typically offered in Fall, Spring & Summer.

### **CRL 321. Analytical Chemistry I Lab. 2 Credits.**

Practical experience in modern techniques of chemical analysis with emphasis on volumetric and gravimetric methods.

Pre / Co requisites: CRL 321 requires co-requisite of CHE 321.

Typically offered in Fall & Spring.

### **CRL 341. Physical Chemistry I Lab. 2 Credits.**

Laboratory course in physical chemistry including computational methods of data analysis, thermodynamics, chemical kinetics, electrochemistry, surface chemistry, electron microscopy and spectroscopy.

Pre / Co requisites: CRL 341 requires prerequisites of CRL 104 and MAT 162 and a prerequisite or corequisite of CHE 341.

Typically offered in Fall.

### **CRL 342. Physical Chemistry II Lab. 2 Credits.**

Advanced laboratory course in physical chemistry including quantum chemistry, computer applications, advanced spectroscopy, and x-ray diffraction with an independent project. It is designed to develop discipline-specific oral communication skills.

Pre / Co requisites: CRL 342 requires a prerequisite of CRL 341 and a corequisite of CHE 342.

Gen Ed Attribute: Speaking Emphasis.

Typically offered in Spring.

### **CRL 371. Forensic Chemistry Lab. 2 Credits.**

This course is the laboratory component of the forensic chemistry lecture course (CHE 371). The theoretical principles learned in the lecture will be practiced using a combination of different analytical techniques and examples of evidentiary materials. Students will practice fingerprint development, sample preparation techniques, presumptive tests, and instrumental analysis techniques such as spectroscopy, chromatography, and mass spectrometry. The course is also designed to help students become proficient in the science of writing laboratory reports and orally communicating scientific concepts and results of analyses.

Pre / Co requisites: CRL 371 requires a prerequisite of CHE 361 and a corequisite of CHE 371.

Gen Ed Attribute: Speaking Emphasis.

Typically offered in Fall.

### **CRL 411. Inorganic Syntheses Lab. 2 Credits.**

A four-hour laboratory course in the synthesis and characterization of inorganic compounds of the main group and the transition elements.

Pre / Co requisites: CRL 411 requires prerequisite of CHE 409 or CHE 411 and co-requisite of CHE 341.

Typically offered in Spring.

### **CRL 424. Analytical Chemistry II Lab. 2 Credits.**

Practical experience in the choice and application of instrumental methods of analysis to chemical systems.

Pre / Co requisites: CRL 424 requires prerequisite or co-requisite of CHE 424.

Typically offered in Spring.

### **CRL 436. Polymer Chemistry Lab. 2 Credits.**

Synthesis of polymers; molecular, physical, and thermal characterization of polymers.

Instrumental methods include X-rays, IR, electron microscopy, and thermal analysis.

Pre / Co requisites: CRL 436 requires co-requisite of CHE 436.

### **CRL 476. Biochemistry I Lab. 2 Credits.**

Laboratory exercises in the fundamentals of biochemistry.

Pre / Co requisites: CRL 476 requires co-requisite of CHE 476.

Typically offered in Fall & Spring.

### **CRL 477. Biochemistry II Lab. 2 Credits.**

An advanced laboratory course in biochemistry. This course is a practical application of biochemical principles, methods used in forensic DNA typing, and drug metabolite analysis in toxicological matrices.

Pre / Co requisites: CRL 477 requires prerequisites of CHE 476 and CRL 476.

Typically offered in Spring.