

# Chemistry (CHMY)

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**CHMY 121. Intro to General Chemistry. 3 Credits.**

This course introduces students to the science of chemistry. The course covers the physical states of matter, including the nomenclature used in chemistry, along with atomic structure, elements, the periodic chart, chemical bonding, chemical reactions, and acid-base theory. This course is a general overview for non-science. It must be taken concurrently with CHMY 122.

**CHMY 122. Intro to Gen Chem Lab. 1 Credit.**

This course must be taken concurrently with CHMY 121. The course does meet the laboratory science requirement.

Course Fees: \$21.50

**CHMY 123. Intro to Organic & Biochem. 3 Credits.**

Basic topics in organic chemistry and biochemistry; chemistry as it relates to the human body--functional groups, nomenclature, categories of compounds, and reactions, metabolism, cellular processes, nutrition, and foods. Prerequisite: High School Chemistry or CHMY 121 and CHMY 122. Second of a two-semester sequence for majors that do not require a strong background in chemistry. It must be taken concurrently with CHMY 124.

**CHMY 124. Intro to Organic & Biochem Lab. 1 Credit.**

This course must be taken concurrently with CHMY 123. This course does meet the laboratory science requirement.

Course Fees: \$21.50

**CHMY 141. College Chemistry I. 3 Credits.**

An introductory survey of chemistry. This is the first semester of a two-semester sequence. The sequence provides an introduction to the principles of physical and inorganic chemistry appropriate for the level of knowledge necessary for students who plan on majoring in medicine, pharmacy, engineering, or the sciences. A major theme of the course is to introduce students to the chemist's view of the universe, with an emphasis on making connections between the macroscopic and the particulate levels of matter. This course is primarily for science majors and other students planning to take more than one year of chemistry. Includes laboratory. Prerequisite: High School Algebra. CHMY 142 must be taken concurrently to fulfill the laboratory science requirement.

**CHMY 142. College Chemistry Lab I. 2 Credits.**

This course must be taken concurrently with CHMY 141. This course does meet the laboratory science requirement.

Course Fees: \$23.50

**CHMY 143. College Chemistry II. 3 Credits.**

An introductory survey of chemistry. This is the second semester of a two-semester sequence. The sequence provides an introduction to the principles of physical and inorganic chemistry appropriate for the level of knowledge necessary for students who plan on majoring in medicine, pharmacy, engineering, or the sciences. A major theme of the course is to introduce students to the chemist's view of the universe, with an emphasis on making connections between the macroscopic and the particulate levels of matter. This course is primarily for science majors and other students planning to take more than one year of chemistry. Includes laboratory. Prerequisite: CHMY 141. This course meets the laboratory science requirement.

**CHMY 144. College Chemistry Lab II. 2 Credits.**

This laboratory will demonstrate the concepts encountered in College Chemistry II. Prerequisite: High School Algebra. CHMY 143 must be taken concurrently to fulfill a laboratory science requirement, unless CHMY 143 has already been successfully completed.

Course Fees: \$26.50

**CHMY 192. Independent Study. 3 Credits.**

Provides an opportunity for students to engage in directed research and study on an individual basis rather than in a formal class environment.

**CHMY 291. Special Topics. 3 Credits.**

Courses not required in any curriculum for which there is a particular one-time need, or given on a trial basis to determine acceptability and demand before requesting a regular course number.

**CHMY 292. Independent Study. 3 Credits.**

Provides an opportunity for students to engage in directed research and study on an individual basis rather than in a formal class environment.

**CHMY 298. Cooperative Education. 1-12 Credits.**

A planned and supervised work-learning experience in industry, business, government, or community service agencies related to the University program of study. Prerequisites: Two semesters of attendance at Montana State University-Northern, approval of advisor, Dean of the College of Education, Arts and Sciences, Nursing, and cooperative education coordinator. Pass/Fail only. This course does not meet the laboratory science requirement.

**CHMY 321. Organic Chemistry I. 3 Credits.**

Organic chemistry for science and related majors with emphasis on the structure of molecules, chemical and physical properties, and reactions mechanisms of hydrocarbons, alkyl halides, and alcohols. Examines the nature of alkanes, alkenes, alkynes, cyclic alkanes, and aromatic hydrocarbon compounds. Concurrent enrollment in CHMY 322 is required. Prerequisites: CHMY 143 and CHMY 144.

**CHMY 322. Organic Chemistry Lab I. 2 Credits.**

Laboratory portion of Organic Chemistry I. Experiments in organic techniques of distillation, extraction, and recrystallization, preparation and identification of hydrocarbons, alcohol, cyclic alkanes, and alkyl halides compounds. Concurrent enrollment in CHMY 321 is required. Prerequisite: CHMY 144. This course taken in conjunction with the lecture portion of the course (CHMY 341) meets the laboratory science requirement. Course Fees: \$26.50

**CHMY 323. Organic Chemistry II. 3 Credits.**

Examination of molecules, their chemical and physical properties, reactions mechanisms of ether, carboxylic acids and their derivatives, aldehydes, ketones, amines, aryl halides, phenolic compounds, and introduction into biochemistry. Concurrent enrollment in CHMY 344 is required. Prerequisite: CHMY 321.

**CHMY 324. Organic Chemistry Lab II. 2 Credits.**

Laboratory portion of Organic Chemistry II. Preparation and identification of ether, carboxylic acid, esters, amines, aldehydes, ketone, other compounds, and reaction mechanisms. Concurrent enrollment in CHMY 323 is required. Prerequisite: CHMY 322. This course taken in conjunction with the lecture portion of the course (CHMY 323) meets the laboratory science requirement. Course Fees: \$26.50

**CHMY 391. Special Topics. 3 Credits.**

Courses not required in any curriculum for which there is a particular one-time need, or given on a trial basis to determine acceptability and demand before requesting a regular course number.

**CHMY 392. Independent Study. 3 Credits.**

Provides an opportunity for students to engage in directed research and study on an individual basis rather than in a formal class environment.

**CHMY 491. Special Topics. 3 Credits.**

Courses not required in any curriculum for which there is a particular one-time need, or given on a trial basis to determine acceptability and demand before requesting a regular course number.

**CHMY 492. Independent Study. 3 Credits.**

Provides an opportunity for students to engage in directed research and study on an individual basis rather than in a formal class environment.

**CHMY 498. Cooperative Education. 1-12 Credits.**

A planned and supervised work-learning experience in industry, business, government, or community service agencies related to the University program of study. Prerequisites: CHMY 298 or Junior standing and approval of advisor, Dean of the College of Education, Arts and Sciences, Nursing, and cooperative education coordinator. Pass/Fail only. This course does not meet the laboratory science requirement .