

# CHE

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## Courses

### CHE 100 Basic Chemistry

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

An introductory course on concepts in chemistry. Topics include: dimensional analysis and problem solving, physical and chemical properties of matter, organization of the periodic table, writing and manipulating formulas, stoichiometry, gas laws, equilibrium, and acids and bases.

Prerequisites: ENG 085 and MAT 093 (minimum grade C for both), or appropriate placements

### CHE 105 Everyday Chemistry

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

A course for non-science majors on the relevance of basic principles of chemistry to daily life. Topics include: laboratory/data analysis, matter classification, the periodic table, compound formation, chemical reactions, synthesis/analysis of consumer products, and the global impact of consumerism.

Prerequisites: ENG 085 and MAT 093 (minimum grade C for both), or appropriate placements

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### CHE 110 Fundamentals of Chemistry

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

A college-level general chemistry course for non-majors. Topics include: atomic structure, bonding, chemical reactions, properties and states of matter, acids and bases, and equilibrium.

Prerequisites: ENG 085, and MAT 096 or MAT 105 or MAT 124 (minimum grade C for all), or appropriate placements

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### CHE 111 Bio-Organic Chemistry

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

Study of foundational concepts of organic chemistry and biochemistry. Topics include: types of organic compounds and representative reactions, and biochemical compounds and reactions.

Prerequisites: CHE 110 (minimum grade C) or CHE 121 and CHE 131 (minimum grade C for both)

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### CHE 115 General, Organic, and Biological Chemistry

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

A survey of basic general, organic, and biological chemistry. Topics include: dimensional analysis, problem-solving strategies, atomic structure, chemical bonding, reactions, acid-base chemistry, attractive forces, functional groups, structure/reactions of major macromolecules, and metabolism.

Prerequisites: ENG 085, and MAT 096 or MAT 124 (minimum grade C for all), or appropriate placement

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### CHE 121 General Chemistry 1

**4 Credits. 4 Lecture Hours. 0 Lab Hour.**

A general chemistry course for science majors. Topics include: measurement systems; composition, properties, and reactions of elements and compounds; states of matter; atomic structure and bonding; and solution chemistry.

Prerequisites: High School Chemistry (within three years, minimum grade B) or CHE 100 or CHE 110 (minimum grade C for both), and MAT 124 or MAT 096 (minimum grade C for both), and ENG 085 (minimum grade C), or appropriate placements

Corequisites: CHE 131

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### CHE 122 General Chemistry 2

**4 Credits. 4 Lecture Hours. 0 Lab Hour.**

A continuation of CHE 121. Topics include: kinetics, chemical equilibrium, acid-base chemistry, acid-base and solubility equilibrium, thermodynamics, electrochemistry, and chemistry of transition elements.

Prerequisites: CHE 121 and CHE 131 (minimum grade C for both) and MAT 125 or MAT 151 or MAT 153 (minimum grade C for all)

Corequisites: CHE 132: General Chemistry 2 Lab

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### CHE 131 General Chemistry 1 Lab

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

A laboratory course that accompanies CHE 121.

Prerequisites: High School Chemistry (within 3 years, minimum grade B) or CHE 100 or CHE 110 (minimum grade C for both), and MAT 124 or MAT 096 (minimum grade C for both), and ENG 085 (minimum grade C), or appropriate placements

Corequisites: CHE 121

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### CHE 132 General Chemistry 2 Lab

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

A laboratory course that accompanies CHE 122.

Prerequisites: CHE 121 and CHE 131 (minimum grade C for both)

Corequisites: CHE 122

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### CHE 201 Organic Chemistry 1

**3 Credits. 3 Lecture Hours. 0 Lab Hour.**

An organic chemistry course for students preparing for science-related employment or additional science education. Topics include: principles of carbon chemistry including bonding, structure, mechanisms, properties, reactions, synthesis, acids, and bases.

Prerequisites: CHE 122 and CHE 132 (minimum grade C for both)

Corequisites: CHE 211

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**CHE 202 Organic Chemistry 2****3 Credits. 3 Lecture Hours. 0 Lab Hour.**

A continuation of CHE 201. Topics include: mass spectrometry; infrared, ultraviolet/visible, and NMR spectroscopies; aromaticity; chemistry of benzene, carboxylic acids, amines, aldehydes, and ketones; and oxidation and reduction.

Prerequisites: CHE 201 and CHE 211 (minimum grade C for both)

Corequisites: CHE 212

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**CHE 211 Organic Chemistry 1 Lab****2 Credits. 0 Lecture Hour. 4 Lab Hours.**

A laboratory course that accompanies CHE 201. Laboratory experiences include: general organic laboratory techniques; isolation, purification, and identification of organic compounds; simple synthesis; and determination of unknowns.

Prerequisites: CHE 122 and CHE 132 (minimum grade C for both)

Corequisites: CHE 201

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**CHE 212 Organic Chemistry 2 Lab****2 Credits. 0 Lecture Hour. 4 Lab Hours.**

A laboratory course that accompanies CHE 202. Laboratory experiences include: simple, complex, and multistep synthesis; and isolation, purification, analysis, and identification of organic compounds.

Prerequisites: CHE 201 and CHE 211 (minimum grade C for both)

Corequisites: CHE 202

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**CHE 311 Chemistry and Analysis of Food 1****4 Credits. 3 Lecture Hours. 3 Lab Hours.**

The first part of a two-semester biochemistry sequence for students seeking a bachelor's degree in Culinary and Food Science. Topics include: structure, nomenclature, chemical reactions, acid-base chemistry, and functionality of food components including water, sugars, carbohydrates, and lipids; and chemistry of changes that occur during food processing, storage, and utilization of these components.

Prerequisites: CHE 115 and MAT 151 (minimum grade C for both), and instructor consent

Instructor Consent Required

**CHE 312 Chemistry and Analysis of Food 2****4 Credits. 3 Lecture Hours. 3 Lab Hours.**

A continuation of CHE 311. Topics include: structure, nomenclature, chemical reactions, acid-base chemistry, and functionality of food components including proteins, enzymes, flavors, colorants, and other food nutrients and additives; chemistry of changes that occur during food processing, storage, and utilization of these components; and analysis of food components.

Prerequisites: CHE 311 (minimum grade C), and instructor consent

Instructor Consent Required