

Current Curriculum
4-Credit (Lecture & Lab)

CHEM 123: General Chemistry I (Lecture and Lab) Atomic Theory, Periodicity, Formulas, Moles, Chemical Reactions, Stoichiometry, Ionic and Covalent Bonds

CHEM 234: General Chemistry II (Lecture and Lab) Kinetics, Thermodynamics, Equilibrium, Electrochemistry

CHEM 235: Organic Chemistry I (Lecture and Lab) Spectroscopy, *Conformational Analysis, Isomers, Stereochemistry, MO Theory, Acidity and Basicity*, Nucleophilic Substitution, Elimination, *Introduction to Synthesis*

CHEM 236: Organic Chemistry II (Lecture and Lab): Substitution and Elimination Reactions, Oxidations, Carbonyl Additions, Ylides, Decarboxylation, Acyl Substitution, Electrophilic Addition, Pericyclic Reactions, Rearrangements, Radicals, *Synthetic Strategies*

BCHM 321: Biochemistry (Lecture and Lab) Structure and Function of Proteins, Nucleic Acids and Lipids, Including Influence of *Thermodynamic, Kinetic and Intermolecular Influences* in Biochemical Reactions

CHEM 341: Advanced Inorganic Chemistry (Lecture and Lab) Quantum Mechanics, Symmetry, Ligand Field Theory, Inorganic Reaction Mechanisms, Organometallics, Catalysis

Proposed Curriculum

4-Credit Classes

CHEM 125: Introduction to Chemical Structure and Properties: Atomic Theory, Periodicity, Formulas, Moles, Ionic and Covalent Bonds, Lewis Structures, Molecular Shapes, *Intermolecular Forces, MO Theory, Conformational Analysis, Isomers, Stereochemistry*, Lewis Acids and Bases, Proton Transfer Reactions, Acid and Base Strengths

CHEM 234: Quantitation Introduction to Chemical Reactions (for health-science, nonmajors, w/Lab)

CHEM 250: Reactions of Nucleophiles and Electrophiles (React. I): Reactions of Carbonyls and Nitriles, Substitution at Carboxylic Derivatives, Enol, Enamine and Alkene Nucleophiles, Complex Hydrides and NADH, Fatty Acid Biosynthesis, Acetal/Ketal Formation and Polysaccharides and Nucleosides

CHEM 251: Intermediate Reactions of Nucleophiles and Electrophiles (React. II) : Lewis Acid/Base Interactions in Transition Metal Complexes, Coordination of Amino Acids and Nucleic Acids, Heme Complexes, Ligand Field Theory, Spectroscopy, Associative and Dissociative Substitution Reactions, Aliphatic Nucleophilic Substitution Reactions, Elimination Reactions

CHEM 315: Advanced Reactions (React. III): Substitution at Aromatics, Pericyclic Reactions (Diels Alder, Cope, Cascade Reactions in Biosynthesis), Ring Opening and Closing Reactions, Concerted Organometallic Reactions, Electron Transfer Reactions, Use of Metals as Electron Shuttles


0/1-Credit Labs


CHEM 201: Purification/Structure Lab I: Chemical Separations (recrystallization, distillation, extraction) based on acid/base behavior and


CHEM 202: Purification /Chromatography Lab II: Use of TLC and Silica Gel Chromatography, Polyacrylamide Gel Electrophoresis and Gel/Ion Exchange/Affinity Chromatography, Spectroscopy

CHEM 203: Synthesis Lab: Synthesis of an Organometallic Compound, Liposomes and Micelles, In-Vivo Protein Synthesis, Modification of Literature Synthesis to Greener Conditions

Legend

Introductory 

Foundation 

In-Depth 

Italics: moved to different course

Underlined: moved to different lab

