

CHEMISTRY
(NATURAL SCIENCES DIVISION)

CHEM-050 PREPATORY CHEMISTRY (3 cr.) This class prepares students for CHEM 111. Emphasis on chemical problem solving and SI unit conversions. Other topics include: mole concept, chemical stoichiometry, chemical formulas, nomenclature, periodic table, equation balancing and molecular geometry. Pre-requisite: MATH 024 or MATH 025 or placement. Course Fee.

CHEM-102 THE CHEMISTRY OF DAILY LIFE (4 cr.) From the food we eat to the medicines we take to the transportation we use, we experience chemistry every day. In this course, you will study the chemistry of everyday life with the goal of making informed consumer decisions. Pre-requisite: A grade of "C" or better in MATH 025 or satisfactory math placement. Lab fee.

CHEM-105 GENERAL, ORGANIC AND BIOCHEMISTRY (4 cr.) An introduction to chemistry with an emphasis on biochemistry for the health professions. Three lectures and one laboratory per week. Pre-requisite: A grade of "C" or better in MATH 025 or satisfactory math placement. Lab fee.

CHEM-111 PRINCIPLES OF CHEMISTRY I (4 cr.) A systematic and intensive treatment of chemical principles and their applications. Four hours of lecture/recitation, and one 3-hour laboratory per week. Pre-requisites: A grade of 'C' or better in MATH 108 or MATH 137 or satisfactory math placement. Lab fee.

CHEM-112 PRINCIPLES OF CHEMISTRY II (4 cr.) Elementary theoretical chemistry and its application to analytical practice. Includes emphasis on intermolecular forces, equilibrium, electrochemistry and nuclear chemistry. Four hours of lecture/recitation and one 3-hour laboratory per week. Pre-requisite: a grade of "C" or better in CHEM 111. Lab fee.

CHEM-190 DIRECTED STUDY IN CHEMISTRY (1-12 cr.)

CHEM-192 SPECIAL TOPICS IN CHEMISTRY (1-12 cr.)

CHEM-290 DIRECTED STUDY IN CHEMISTRY (1-4 cr.)

CHEM-291 WORKSHOP IN CHEMISTRY (1-4 cr.)

CHEM-292 SPECIAL TOPICS IN CHEMISTRY (1-4 cr.)

CHEM-295 PRACTICUM IN CHEMISTRY (1-2 cr.)

CHEM-296 COOPERATIVE EDUCATION IN CHEMISTRY (1-3 cr.)

CHEM-299 RESEARCH ASSISTANTSHIP (1-12 cr.)

CHEM-305 PHYSICAL CHEMISTRY I (3 cr.) Properties of Matter, First and Second Laws of Thermodynamics, Equilibrium, Chemical Reactions, Solutions. Pre-requisite: A grade of 'C' or better in MATH 175.

CHEM-306 PHYSICAL CHEMISTRY II (3 cr.) Quantum theory, Atoms, Diatomic Molecules, Polyatomic Molecules, Chemical Kinetics, and Statistical Mechanics. Pre-requisite: a grade of "C" or better in CHEM 305

CHEM-325 QUANTITATIVE ANALYSIS (4 cr.) Theory and practice of classical gravimetric and volumetric chemical analyses with an introduction to instrumental techniques in the laboratory. Basic data handling and statistics, chemical equilibrium, electrochemistry. Three hours of lecture and one 4-hour laboratory per week. Pre-requisite: a grade of C or better in CHEM 112. Lab fee.

CHEM-353 LABORATORY PREPARATION TECHNIQUES (2 cr.) Techniques of solution preparation, chemical storage and management, prevention of contamination, and quality assurance. One hour of lecture and one 3-hour laboratory per week. Pre-requisite: a grade of "C" or better in CHEM 325

CHEM-371 ORGANIC CHEMISTRY I (3 cr.) Principles and theories of organic chemistry and the properties, preparations, and reactions of organic compounds. Three hours of lecture per week. This is a writing integrated course. Pre-requisite: A grade of 'C' or better in CHEM 112.

CHEM-372 ORGANIC CHEMISTRY II (3 cr.) Continuation of Chemistry 371. Three hours of lecture per week. Pre-requisite: a grade of "C" or better in CHEM 371.

CHEM-373 ORGANIC CHEMISTRY I LAB (1 cr.) Laboratory to accompany Chemistry 371. One 3-hour lab per week. Co-requisite: CHEM 371. Lab fee.

CHEM-374 ORGANIC CHEMISTRY II LAB (1 cr.) Laboratory to accompany Chemistry 372. One 3-hour lab per week. Pre-requisite: a grade of "C" or better in CHEM 371 and CHEM 373. Co-requisite: CHEM 372. Lab fee.

CHEM-390 DIRECTED STUDY IN CHEMISTRY (1-4 cr.)

CHEM-392 SPECIAL TOPICS IN CHEMISTRY (1-4 cr.)

CHEM-395 PRACTICUM IN CHEMISTRY (1-2 cr.)

CHEM-399 RESEARCH ASSISTANTSHIP (1-12 cr.)

CHEM-402 PRINCIPLES OF CHEMISTRY (3 cr.)

CHEM-454 INSTRUMENTAL ANALYSIS (4 cr.) Course covers the basic principles and use of instruments. Ultraviolet, visible, infrared, Raman, and atomic absorption spectroscopy. Electrochemistry. Pre-requisite: a grade of "C" or better in CHEM 325. Lab fee.

CHEM-463 INORGANIC CHEMISTRY (4 cr.) Course covers the basic principles of descriptive chemistry, coordination chemistry, models of bonding in transition metal complexes, molecular symmetry, molecular orbital theory, spectroscopy, and organometallic chemistry. The laboratory component introduces the student to standard aspects of synthetic inorganic chemistry, bioinorganic chemistry, organometallic chemistry and catalytic chemistry. Pre-requisite: a grade of "C" or better in CHEM 325. Lab fee.

CHEM-481 BIOCHEMISTRY I (4 cr.) A study of protein structures and function and the basics of sugar and lipid protein analysis. Three hours of lecture and one 3-hour laboratory per week. Pre-requisite: a grade of "C" or better in CHEM 371.

CHEM-482 BIOCHEMISTRY II (3 cr.) A study of the storage, transmission and expression of molecular genetic information and interaction of information, conformation and metabolism in molecular physiology. Three hours of lecture/discussion per week. Pre-requisite: a grade of "C" or better in CHEM 481.

CHEM-490 DIRECTED STUDY IN CHEMISTRY (1-4 cr.)

CHEM-491 WORKSHOP IN CHEMISTRY (1-4 cr.)

CHEM-492 SPECIAL TOPICS IN CHEMISTRY (1-4 cr.)

CHEM-495 PRACTICUM IN CHEMISTRY (1-2 cr.)

CHEM-496 COOPERATIVE EDUCATION IN CHEMISTRY (1-3 cr.)

CHEM-499 RESEARCH PROJECT AND SEMINAR IN CHEMISTRY (1-3 cr.) Students will conduct and communicate the results of a research project in the Natural Sciences Division. Topics may include the historical, philosophical, cultural and environmental aspects, and the processes of natural science. Requirements of students include satisfactory oral presentation and defense of their research and submission of a written report approved by their advisor to the Natural Sciences Division. Pre-requisite: NS 398.