

CHEMISTRY LAB (CHEZ)

CHEZ 101. General Chemistry Laboratory I. 1 Hour.

Semester course; 1 lecture and 2 laboratory hours. 1 credit. Pre- or corequisite: CHEM 101. Experimental work correlated with CHEM 101 with selected forensic science applications. Each student is charged for breakage incurred. Approved safety glasses are required. Failure to check out of laboratory upon withdrawal or for other reasons will incur a charge billed from the Student Accounting Department.

CHEZ 102. General Chemistry Laboratory II. 1 Hour.

Semester course; 1 lecture and 2 laboratory hours. 1 credit. Prerequisites: CHEM 101 and CHEZ 101 with minimum grades of C. Pre- or corequisite: CHEM 102. Experimental work includes qualitative analysis with selected forensic science applications. Each student is charged for breakage incurred. Approved safety glasses are required. Failure to check out of laboratory upon withdrawal or for other reasons will incur a charge billed from the Student Accounting Department.

CHEZ 110. Chemistry and Society Laboratory. 1 Hour.

Semester course; 2 laboratory hours. 1 credit. Pre- or corequisite: CHEM 110. Experimental work correlated with CHEM 110. Not applicable for credit toward the B.S. in Chemistry. Each student is charged for breakage incurred. Approved safety glasses are required. Failure to check out of laboratory upon withdrawal or for other reasons will incur a charge billed from the Student Accounting Department.

CHEZ 301. Organic Chemistry Laboratory I. 2 Hours.

Semester course; 4 laboratory hours. 2 credits. Prerequisites: CHEM 102 and CHEZ 102 with minimum grades of C. Pre- or corequisite: CHEM 301. Experimental work correlated with CHEM 301. Each student is charged for breakage incurred. Approved safety glasses are required. Failure to check out of laboratory upon withdrawal or for other reasons will incur a charge billed from the Student Accounting Department.

CHEZ 302. Organic Chemistry Laboratory II. 2 Hours.

Semester course; 4 laboratory hours. 2 credits. Prerequisites: CHEM 301 and CHEZ 301 with minimum grades of C. Pre- or corequisite: CHEM 302. Experimental work correlated with CHEM 302. Each student is charged for breakage incurred. Approved safety glasses are required. Failure to check out of laboratory upon withdrawal or for other reasons will incur a charge billed from the Student Accounting Department.

CHEZ 303. Physical Chemistry Laboratory I. 2 Hours.

Semester course; 4 laboratory hours. 2 credits. Prerequisites: CHEM 102 and CHEZ 102. Pre- or corequisites: CHEM 303, 309 and CHEZ 309. This course covers experiments in calorimetry, molecular and thermodynamic properties of gases and liquids, surfaces, electrochemistry, equilibria, polymers, phase diagrams, and biophysical chemistry. Extensive report writing, laboratory notebook writing and statistical analysis of data are emphasized. A final project may be required.

CHEZ 304. Physical Chemistry Laboratory II. 2 Hours.

Semester course; 4 laboratory hours. 2 credits. Prerequisites: CHEM 303, 309 and CHEZ 303, 309. Pre- or corequisite: CHEM 304. This course covers experiments in absorption and emission spectroscopy, infrared and Raman spectroscopy, NMR spectroscopy, kinetics, photochemistry, biophysical chemistry and modeling. Report writing, laboratory notebook writing and statistical analysis of data are emphasized. A final project may be required.

CHEZ 309. Quantitative Analysis Laboratory. 2 Hours.

Semester course; 1 lecture and 3 laboratory hours. 2 credits. Prerequisites: CHEM 102 and CHEZ 102 with minimum grades of C. Pre- or corequisite: CHEM 309. Laboratory associated with quantitative analysis. Includes practice in volumetric and instrumental laboratory techniques as applied to measurement sciences.

CHEZ 313. Physical Chemistry Laboratory I. 2 Hours.

Semester course; 4 laboratory hours. 2 credits. Prerequisites: CHEZ 309 and UNIV 200, each with a minimum grade of C. Corequisite: CHEM 313 or CHEM 314. Mathematical models of chemistry, including molecular structure, spectroscopy and kinetics. Report writing, laboratory notebook writing and statistical analysis of data are emphasized. A final project may be required. Students may receive credit toward graduation for only one of CHEZ 313 or CHEZ 315.

CHEZ 315. Physical Chemistry Laboratory II. 2 Hours.

Semester course; 4 laboratory hours. 2 credits. Prerequisites: CHEZ 309 and UNIV 200, each with a minimum grade of C. Corequisite: CHEM 315. Mathematical models of chemistry, including thermodynamics, spectroscopy and kinetics. Report writing, laboratory notebook writing and statistical analysis of data are emphasized. A final project may be required. Students may receive credit toward graduation for only one of CHEZ 313 or CHEZ 315.

CHEZ 400. Exploring the Frontiers of Chemistry: Research Methods. 2 Hours.

Semester course; 1 lecture and 3 laboratory hours. 2 credits. Prerequisites: CHEM 302 and CHEZ 302; CHEM 309 and CHEZ 309; CHEM 320; and CHEM 398, all with a minimum grade of C. Enrollment is restricted to students with 90 undergraduate credit hours. Introduction to the process of performing cutting-edge research in chemistry through the design, execution and presentation of a research project. A final presentation is required.

CHEZ 404. Biochemistry Laboratory. 2 Hours.

Semester course; 4 laboratory hours. 2 credits. Prerequisites: CHEM 403; CHEZ 302; and CHEZ 313 or CHEZ 315; each with a minimum grade of C. Corequisite: CHEM 404. Fundamental biochemistry laboratory techniques. Report and laboratory notebook writing are emphasized. A final presentation is required.

CHEZ 406. Inorganic Chemistry Laboratory. 2 Hours.

Semester course; 1 lecture and 3 laboratory hours. 2 credits. Prerequisites: CHEM 320 and CHEZ 102. Pre- or corequisite: CHEM 406. Examination of inorganic nonmetal, transition metal and organometallic compounds using modern inorganic methods of synthesis and characterization. Each student is charged for breakage incurred. Approved safety glasses are required. Failure to check out of laboratory upon withdrawal or for other reasons will incur a charge billed from the Student Accounting Department.

CHEZ 409. Instrumental Analysis Laboratory. 2 Hours.

Semester course; 4 laboratory hours. 2 credits. Prerequisites: CHEM 313 or CHEM 314; and CHEZ 313 or CHEZ 315, each with a minimum grade of C. Corequisite: CHEM 409. Practice of electrochemical, spectroscopic and chromatographic methods of analysis.

CHEZ 413. Advanced Physical Chemistry Laboratory. 2 Hours.

Semester course; 4 laboratory hours. 2 credits. Prerequisites: CHEM 313 or CHEM 314; and CHEZ 313, all with a minimum grade of C. Corequisite: CHEM 315. Atomic and molecular spectroscopy and structure. Report writing, laboratory notebook writing and statistical analysis of data are emphasized. A final project and presentation are required.

CHEZ 451. Developing Instructional Experiments in Chemistry. 2 Hours.

Semester course; 4 laboratory hours. 2 credits. Prerequisite: CHEM 351 with a minimum grade of C. Student preceptors help lead a general chemistry laboratory section and select an experiment to develop for a chemistry laboratory course. A final project and presentation focused on experiment development is required.