

REGULAR COURSE SYLLABUS

School of: Letters, Arts & Sciences

Department: Chemistry

CIP Code: 40.0501

Prefix & Course Number: CHE 1850

Crosslisted With*: _____

Course Title: General Chemistry Laboratory

Check All That Apply: Required for Major: Required for Minor: Specified Elective: _____

Required for Concentration: Elective: _____ Service Course:

Credit Hours: 2 (1+3)

Total Contact Hours per semester (assuming 15-16 week semester):

Lecture 15 Lab 45 Internship _____ Practicum _____ Other (please specify type and hours): _____

Schedule Type(s): A Grading Mode(s): L

Variable Topics Courses (list restrictions, including the maximum number of hours that can be earned**):

** NOTE: This information must be included in the course description.

Restrictions (Variable Topics Course): None

Prerequisite(s): CHE 1800. Completion of CHE 1800 or CHE 1810; and CHE 1850 with a passing grade is required to receive General Studies credit.

Corequisite(s): _____

Prerequisite(s) or Corequisite(s): CHE 1810

Banner Enforced:

Prerequisite(s):

Corequisite(s):

Prerequisite(s) or Corequisite(s):

Catalog Course Description:

This course introduces basic laboratory techniques and will reinforce/explore concepts introduced in CHE 1800 and CHE 1810. A one hour recitation will be utilized to discuss theoretical and procedural aspects of laboratory experiments. Chemical literacy including report writing and reference sources will be introduced. (General Studies – Level II, Natural Sciences)

APPROVED:

Department Chair OR Program Director

Dean OR Associate Dean

Associate VP, Academic Affairs

Date

Date

Date

Prefix and Course Number: CHE 1850

Required Reading and Other Materials will be equivalent to:

Various modules from Chemical Education Resources Modular Laboratory Program.

Specific, Measurable Student Behavioral Learning Objectives:

Upon completion of this course the student should be able to:

1. Recognize the various health and safety concerns inherent in a chemical lab setting.
2. Choose glassware and labware appropriate to a given laboratory operation.
3. Know the appearance and properties of common laboratory chemicals.
4. Weigh by difference.
5. Make quantitative transfers.
6. Condition volumetric glassware.
7. Perform volumetric measurements.
8. Prepare solutions of specified concentrations.
9. Dilute solutions to specified concentrations.
10. Prepare a buffer of specified pH and ionic strength.
11. Design a procedure for separating a mixture using techniques such as filtration, decantation, evaporation, and extraction.
12. Demonstrate proper methods of acquiring, processing, and presenting data.
13. Document their observations in a thorough and concise manner.
14. Format a laboratory report in American Chemical Society form.
15. List common laboratory reference materials.

Detailed Outline of Course Content (Major Topics and Subtopics) or Outline of Field Experience/Internship (experience, responsibilities and supervision) (format: I, A, 1, a, etc.):

- I. Physical properties of matter
- II. Mixtures
- III. Stoichiometry
 - A. determination of molecular weight
 - B. writing chemical equations
- IV. Structure of matter
- V. Gas laws
- VI. Colligative properties of solutions
- VII. Chemical kinetics
- VIII. Thermochemistry
- IX. Acid-base chemistry
 - A. titrations
 - B. buffer systems
- X. Precipitation
 - A. solubility product
 - B. qualitative analysis
- XI. Chemical literacy

Evaluation of Student Performance (format: 1, a, i, ii, etc.):

Evaluation of student performance will be based upon required laboratory reports, pre-lab assignments, notebook entries, quizzes, and a laboratory final examination.