**CHEM 114L: General Chemistry II Lab**

**Department:** Chemistry

**Designation:** Required

**Catalog Data:** (0-1) 1 credit. Prerequisite: CHEM 112L, Prerequisite or corequisite: CHEM 114

**Prerequisites:** CHEM 114.

**Textbook: Prepackaged set of experiments** Thomson Custom Solutions

(ISBN- 10: 0-495-40783-6).

**Course Learning Outcomes:**

* + - Students will gain familiarity with the principles and techniques of inorganic qualitative analysis, chemical kinetics, and the synthesis of selected chemical compounds.
    - Perform procedures for the analytical separation and qualitative determination of selected anions and cations in an aqueous solution.
    - Understand the fundamental and operational principles upon which common methods of separation and purification of chemical substances are based.
    - Identify sources of error in chemical experiments.
    - Interpret experimental results and draw reasonable conclusions.
    - Practice laboratory safety procedures.
    - Anticipate, recognize, and respond to hazards of chemical materials and manipulations.
    - Learn the importance of following correct laboratory procedures.
      * Keep legible and complete experimental records.
      * Collaborate with peers in obtaining and interpreting data.

**Topics:** Principles and techniques of inorganic qualitative analysis, chemical kinetics, and

the synthesis of selected chemical compounds.

**Class/Laboratory Schedule:** Varies

**Contribution to Criterion 5:** Basic sciences

**Relationship of Course to ABET Outcomes (a) through (k)**

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|  | **Level of Emphasis** | | |
|  | Low | Medium | High |
| **ABET Outcome** |  |  |  |
| (a) an ability to apply knowledge of mathematics, science, and engineering |  |  | X |
| (b) an ability to design and conduct experiments, as well as to analyze and interpret data |  |  | X |
| (c) an ability to design a system, component, or process to meet desired needs within realistic constraints such as economic, environmental, social, political, ethical, health and safety, manufacturability, and sustainability |  |  |  |
| (d) an ability to function on multidisciplinary teams |  |  |  |
| (e) an ability to identify, formulate, and solve engineering problems |  |  |  |
| (g) an ability to communicate effectively |  |  |  |
| (h) the broad education necessary to understand the impact of engineering solutions in a global, economic, environmental, and societal context |  |  |  |
| (i) a recognition of the need for, and an ability to engage in life-long learning |  |  |  |
| (j) a knowledge of contemporary issues |  |  |  |
| (k) an ability to use the techniques, skills, and modern engineering tools necessary for engineering practice. |  | X |  |

**Prepared By:** Dr. Duane Hrncir, Ph.D. Chemistry and Provost and Vice President for Academic Affairs, June 1, 2010