

**Eastern Illinois University**  
**New Course Proposal - General Education Course**  
**CHM 1315G, General Chemistry Laboratory I**

### 1. Catalog Description

**CHM 1315G General Chemistry Laboratory I. (0-3-1) F,S.** Short title: Gen.Chem. Lab I  
Experimental work illustrating chemical principles and concepts described in the companion lecture course. Must be taken concurrently with CHM 1310G. Writing active.

### 2. Student Learning Objectives

Goal: EIU students will demonstrate the ability to think critically.

Objectives: Students will:

- a. apply the concepts learned in the companion lecture course to actual chemical systems.
- b. demonstrate proficiency in a variety of laboratory techniques and operations including making measurements using common laboratory equipment.
- c. be able to accurately collect and record data.
- d. use introductory statistical methods for dealing with repetitive measurements.
- e. be able to effectively utilize and interpret collected data including the ability to formulate conclusions based on that data.

### 3. Course Outline

<b>Week #</b>	<b>Description</b>
1	Introduction to the use of common laboratory equipment
2	Measurements of mass and volume and statistical treatment of data
3	Study of the relationship between a written chemical equation and the actual reaction
4	Characteristics of compounds dissolved in solution
5	Identification of a solution unknown based on solubility and precipitation data
6	Preparation and analysis of an inorganic compound (Part I)
7	Preparation and analysis of an inorganic compound (Part II)
8	Introduction to the concept of acid-base titrations
9	Energy changes involved in chemical reactions
10	Preparation and analysis of an inorganic compound (Part I -distinct from #6 and #7)
11	Preparation and analysis of an inorganic compound (Part II - distinct from #6 and #7)
12	A study of the interaction of light with matter - atomic structure
13	Properties and composition of air
14	Determination of the gas constant
15	Lab check-out

#### 4. Evaluation of Student Learning

- a. The students will be evaluated on the basis of a lab report for each experiment and by several quizzes. Lab reports will constitute approximately 70 percent of the course grade. Quizzes and/or a lab final will make up the remainder of the grade.
- b. The laboratory reports will use a preprinted form from the lab manual which will require students to accurately record detailed observations and clearly present the treatment of acquired data. The "writing active" designation is justified from the writing required in the lab reports and quizzes/final exam.

#### 5. Rationale

- a. This course will fit into the physical science component of the scientific awareness segment. It provides an introduction to the design and implementation of experiments that will enable students to collect and assess scientific data that support the principles covered in the companion 1310G lecture. In addition, the course will strengthen the reasoning ability and promote the intellectual curiosity of the students through the application of problem-solving techniques and inquiry-based experiments.
- b. Must be taken concurrently with CHM 1310G.
- c. This course will be similar to the current CHM 1315 and will replace it. It will maintain the same curriculum ID as CHM 1315.
- d. This course is required for all options and concentrations in the BS in Chemistry and all minors in chemistry. It is required for all majors in biological sciences, physics, family and consumer sciences dietetics option, industrial technology, clinical laboratory science, engineering, and geology. It is a requirement in the medical professions programs such as pre-dentistry, pre-medicine, and pre-veterinary, as well as the pre-engineering program. It is also a requirement in the earth science with teacher certification and physics with teacher certification minors.

#### 6. Implementation

- a. The course will be assigned initially to the current General Chemistry faculty: Dr. Klarup, Dr. Blitz, Dr. R. Keiter, Dr. McGuire, Dr. Lawrence, Dr. Deakyne, Dr. Marquart, Dr. Easter, Dr. Furumo, Dr. Sheeran.
- b. Textbook: A locally-produced laboratory manual will be used.
- c. The approved course charge of \$10 will continue. In addition, the purchase of goggles and laboratory manuals will continue to be required of students.
- d. Spring 2001

#### 7. Community College Transfer

A community college course may be judged equivalent to this course.

8. Date approved by the department: 4/11/00

9. Date approved by the college curriculum committee: 4/21/00

10. Date approved by CAA: 10/19/00

Departmental Contact Person: **Dr. Doug Klarup (x 6227)**

## CHM 1395G -- General Chemistry Laboratory I, Honors

### 1. Catalog description

**CHM 1395G. General Chemistry Laboratory I, Honors. (0-3-1) F.** Experimental work demonstrating chemical principles and their applications. Must be taken concurrently with CHM 1390G. Prerequisites: One year of high school chemistry, intermediate algebra, and admission to the University Honors Program. Writing intensive.