

**CHEM 115**  
**INTRODUCTION TO CHEMICAL SCIENCES**  
**CHEM 115-010, 021L, 022L, 023L**  
**12F Fall, 2012**

**General Course Information**

|                    |  |                  |         |        |
|--------------------|--|------------------|---------|--------|
| <b>Text:</b>       | Material from Kotz, Treichel, and Townsend, <i>Chemistry and Chemical Reactivity</i> , 8 <sup>th</sup> Ed. |                  |         |        |
| <b>Lecture:</b>    | CHEM 115-010   | 2:00 – 3:15 ,Th  | 206 BRL | Munson |
|                    | <a href="mailto:bmunson@udel.edu">bmunson@udel.edu</a>   | 831-2917         | 217 BRL |        |
| <b>Laboratory:</b> | CHEM 115-021L  | 12:20 – 03:20 Mo | 006 QDH |        |
|                    | CHEM 115-022L  | 03:35 – 06:35 Mo | 006 QDH |        |
|                    | CHEM 115-023L  | 07:00 – 10:00 Mo | 006 QDH |        |

The general topics for the course will be aqueous inorganic chemistry: nomenclature and properties, chemical reactions, reaction stoichiometry, acid/base equilibria, solubility and  $K_{SP}$ . Calculators and computers will be used for chemical calculations and data analysis,

Lecture notes, laboratory experiments, problems, and previous exams and solutions will be available on Sakai for students enrolled in the course.

**Laboratory experiments will begin on Monday, September 10.** Monday, September 3 is a holiday.

Labs can be done in the allotted time and may not require the entire period. Some experiments may be completed in one lab period; others will require two lab periods. You may bring and study other work in lab. Some of the experiments will be done individually; some, in pairs; and some, in small groups. Most of the experiments will require lab reports that are to be submitted electronically.

There will be a safety presentation at the first lab period. You may not do any experiments in lab without attending this presentation. A brief discussion of possible safety hazards will be given for each experiment.

You must wear safety goggles in the laboratory at all times when anyone is doing any experiment. No sandals, no shorts, no bare midriffs, no bare shoulders are permissible in lab.

**Fashion and chemistry labs are not compatible.**

**Notebook:**

You are to keep a NEAT, WELL-ORGANIZED, BOUND LABORATORY NOTEBOOK with numbered pages. {Loose leaf – no} The introduction and procedure for each experiment must be written in the notebook PRIOR TO the laboratory session and will be checked by the Laboratory Instructor.

**CHEM 115 H Learning Goals**

(Numbers in parentheses indicate the department goal to which each goal is applied.)

After successful completion of this course, a student should be able to do the following:

1. Use a calculator and computer for data analysis. (5)
2. Write brief technical reports. (8, 10)
3. Work effectively in teams in the laboratory. (8)
4. Quantitatively analyze problems in ionic equilibria for weak acids, bases, buffers, solubility and  $K_{SP}$ . (1)
5. Perform experiments in quantitative titrimetric analysis. (1, 2)
6. Name and predict some chemical and physical properties of many inorganic compounds. (1)
7. Use pH meters and conductivity probes for chemical analyses. (6)
8. Understand and practice proper safety procedures in the laboratory. (7)
9. Understand and practice ethically correct presentation of scientific data. (9)