

**CHEM 1204 GENERAL CHEMISTRY II LABORATORY 1 credit**  
**Spring 2009**

2002-2004 Undergraduate Studies Bulletin Description:

Practical applications of the fundamental laws, theories, and principles of chemistry through problem solving and laboratory experiments.

**Prerequisites:**

CHEM 1201 General Chemistry I (lect), CHEM 1203 General Chemistry I Laboratory, Elementary algebra

**Corequisites:**

CHEM 1202 General Chemistry I (Lecture)

**Required Textbook:** General Chemistry Laboratory Manual by Dr. C. D. Devine Third Edition - Summer 1998 (available at the University Bookstore). This is the same manual as used for General Chemistry I (lab)

**Course Objectives and Outcomes:**

**Objective 1:** To promote proper laboratory practices and report preparation

*Outcome 1.1:* Know location of safety equipment, be familiar with emergency procedures and proper laboratory attire.

*Outcome 1.2:* Understand laboratory report format and grading criteria.

*Outcome 1.3:* Use Microcomputers to assist in report preparation. Preparation of graphs using a spreadsheet and/or scientific programming package.

*Outcome 1.4:* Learn about data limitations and experimental uncertainties.

**Objective 2:** Become proficient at handling chemicals and using laboratory equipment..

*Outcome 2.1:* Be trained in handling acids, bases, flammable and toxic substances.

*Outcome 2.2:* Be trained in proper use of balances, burets, pH meters, spectrometers.

**Objective 3:** Reinforce material presented in the General Chemistry II recitation course.

*Outcome 3.1:* Perform experiments on colligative properties and chemical kinetics

*Outcome 3.2:* Perform experiments illustrating chemical equilibria and acid-base theory

*Outcome 3.3:* Perform experiments related to chemical analysis,

*electrochemistry, transition metal complexes, and organic chemistry.*

Students who successfully complete this course should have deepened their knowledge of the theoretical material discussed in General Chemistry II lecture. All topics covered involve fundamental principles of chemistry and they should serve as a basis for future studies in biology, chemistry, and other sciences.

### Overview

Since there may be multiple sections of General Chemistry II Laboratory, the following syllabus should be regarded as a generic syllabus. All laboratory sections perform the same experiments, but there may be Instructor specific differences with regard to certain policies such as grading procedures etc. During your first laboratory period, you will receive additional instructions regarding the exact policies being used.

### Tentative Laboratory Schedule (Spring 2009)

Week #	Dates	Experiment
1	Jan. 26 – Jan. 30	Check-in. Discussion of Laboratory Safety. Lab report Formats. Grading Policy. Exp. #15 Graphical Analysis of Data. (Your instructor may opt to make arrangements to do this experiment in an FDU computer lab)
2	Feb 2- Feb. 6	Exp. #13 Part B. Molar Mass Determination by the Rast Method.
3	Feb. 9 – Feb 13	Exp. #14 Kinetics: Concentrations of Reaction Rates.
4	Feb. 16 – Feb. 20	Exp. #16 Measurement of an Equilibrium Constant.
5	Feb. 23 – Feb. 27	Exp. #17 Potentiometric Acid-Base Titrations
6	Mar. 2 – Mar. 6	Exp. #18 Measurement of a Solubility Constant. And Analysis of Hard Water Bring 1 L of tap water from home.
7.	Mar. 9 – Mar. 13	Exp. #19 Qualitative Analysis of Group III Cations
8	Mar. 23 – Mar. 27	Exp. #21 Redox Titrations.
9	Mar. 30 – April. 3	Exp. #20 Using Cell Potentials to predict chemical reactions
10	Apr. 6 – Apr. 10	Exp. #22 Electrochemical cells.
11	Apr. 13 – Apr. 17	Exp. #23 Ion Exchange Separation of Metal Complexes.
12	Apr. 20 – Apr. 24	Exp. #24 Visible Spectra of Metal Complexes
13	Apr. 27 – May 1	Exp. #25 Synthesis of Organic Esters. Your instructor may also have you do some or all parts of experiment #26 Synthesis of Polymers.
14	May 4 – May 8	Check out. Lab final exam.

The last day for withdrawing from the course with a grade of "W" is April 3.

During the first lab session, your instructor will explain the laboratory report format to be used, the policy regarding lab quizzes, and the general grading policy used for the course. Unless otherwise stated, laboratory reports are due one week after the completion of the experiment. Late lab reports will not be accepted. No make-ups of missed labs are allowed. Students are generally allowed only one excused absence from lab.

Your instructor may also opt to supplement some of the experiments listed above with (a) video tapes

illustrating various chemistry principles, (b) computer exercises, or (c) demonstrations.

**Safety Procedures and Policies:**

During the first laboratory period, your instructor will explain the safety procedures and policies that are to be followed in this course. All students are expected to follow these procedures at all times. Appropriate laboratory attire is required. No student will be permitted into laboratories wearing shorts, halter-tops, open toed sandals, undershirts, tank tops or any other inappropriate attire. All students are to purchase a white laboratory coat which can be used for any Biology or Chemistry class which requires a lab - non-majors or majors.

**Academic Integrity Policy:**

Each student must submit his or her own laboratory report. Copying of reports in full or in part is strictly forbidden and such cheating will be dealt with harshly. Also note that the sharing on computer files in full or in part is strictly forbidden too.

**Fairleigh Dickinson's Academic Integrity Policy****"What is the University's Academic Integrity Policy?"**

Students enrolled at FDU are expected to maintain the highest standards of academic honesty. Students have the responsibility to each other to make known the existence of academic dishonesty to their instructor and then, if necessary, the department chair, school director or academic dean of their College.

Course instructors have the added responsibility to state in advance in their syllabi any special policies and procedures concerning examinations and other academic exercises specific to their course. Students should request this information if not distributed by the instructor.

Academic dishonesty includes, but is not limited to, the following:

**Cheating** - Giving or receiving unauthorized assistance in any academic exercise or examination. Using or attempting to use any unauthorized materials, information or study aids in an examination or academic exercise.

**Plagiarism** - Representing the ideas or language of others as one's own.

**Falsification** - Falsifying or inventing any information, data or citation in an academic exercise.

**Multiple submission** - Submitting substantial portions of an academic exercise more than once for credit without the prior authorization and approval of the current professor.

**Complicity** - Facilitating any of the above actions or performing work that another student then presents as his or her assignment.

**Interference** - Interfering with the ability of a student to perform his or her assignments.

If a student is accused of any of the above infractions, there are sanctions which will be instituted. The Undergraduate Studies Bulletin outlines the procedure followed and the sanctions administered.

The FDU web site includes an [Academic Regulations](#) page. It is highly recommended that all students familiarize themselves with the specific regulations.