

COURSE SYLLABUS

COURSE NAME/NUMBER/TITLE: Introductory Chemistry Laboratory, CHEM 1105, 1 credit hour.

PREREQUISITES: CHEM 1305 or concurrent enrollment.

DESCRIPTION OF COURSE: This course is the laboratory portion that supports CHEM 1305. Basic laboratory techniques and processes will be learned.

TEXTBOOK AND AUTHOR: *Introductory Chemistry Laboratory Manual*, by Mary E. Graff.

OBJECTIVES AND GOALS OF COURSE:

The primary objectives of this course are:

1. To develop fundamental laboratory skills.
2. To study laboratory reactions and their relation to lecture materials.
3. To develop problem solving skills.

PERFORMANCE/LEARNING OBJECTIVES:

Upon completion of this course the student should be able to do the following with a competency level of at least 60%.

1. Make and perform basic calculations using the metric system of measurements.
2. Demonstrate good laboratory practices.
3. Perform laboratory operations using safe procedures.
4. Explain basic reactions from an experimental basis.

REQUIRED EXAMS: There will be a comprehensive laboratory final exam. During the term, there may be short quizzes over selected experiments, and a mid-term exercise. The final grade will be determined by the grades on your laboratory reports, your quizzes and mid-term exercise, post-labs, and the final exam. The grades will be weighted as follows: Reports -65%, Quizzes, pre- and post-lab exercises, and mid-term exercise - 20%, Final Exam - 15%.

ATTENDANCE POLICY: It is important that you do not miss a lab. There are no make-up labs. Your lowest lab report grade will be dropped when calculating the final grades. If you miss a lab, that will count as your drop grade. If you know ahead of time that you will be missing a lab, you may make arrangements to come to another lab section which meets on Monday evening, 7:00-10:10 PM, with Mr. Haller. If you are making arrangements to come to another lab, be sure to do that before the day of the lab. All of our labs are crowded and we want to be sure to maintain a safe environment for all of you.

OTHER INFORMATION: Laboratory reports will be turned in at the end of each lab period. There will be no assigned homework, other than to prepare for the following lab period, reading the experiment and preparing the pre-lab exercise. Post lab exercises will be completed and turned in at the beginning of the following lab period. The pre-lab exercise must be prepared **BEFORE** coming to lab and turned in during the first five minutes of lab. There may be a deduction of points, not to exceed 15, from the final lab report for a late pre-lab. The pre-lab exercise is your "ticket" to lab.

Please turn off cell phones and pagers during class. It is disruptive and disrespectful to your classmates to have a phone ringing during class. If it is a necessity to have a phone or pager on, please see me about it during the first week of class.

Any student who, because of a disabling condition, may require some special arrangements in order to meet course requirements should contact disAbility Services (Student Services Center, SSC119, Phone 371-5436) as soon as possible.

GENERAL INFORMATION: All students are required to wear goggles at all times in the laboratory. There are absolutely **NO EXCEPTIONS!!** Plastic aprons are also required to be worn in the laboratory. **No shorts, no sandals or other open type shoes.** Pants must cover the knees. Your feet must be covered at all times with closed shoes. Muscle shirts, half shirts, and mini-skirts are **strongly** discouraged. Baseball hats and other types of hats are not allowed in the laboratory. No food or beverages are allowed in the laboratory at any time. These rules are for your safety as you learn to work in the laboratory. Failure to comply with safety regulations will result in dismissal from class.

TEACHING METHODS

In the lab environment, I will often not answer your questions directly. It may be frustrating to you, but the process of my asking questions back to you will help you develop the critical thinking skills that are important in all aspects of our lives. This is called the Socratic Method of instruction. Often, in the lab, the first thing I will ask you, is whether you have read the experimental procedure carefully. I may direct you to a portion of the lab manual first, and then have to come back to me if your questions aren't answered. We will be doing some group work in the lab, and I may have you discuss a question with your group before guiding you toward an answer. Please don't be frustrated, because I won't let you flounder. Please ask questions if you don't understand something – AND – remember, if you think something might be a safety issue, then it probably is. The lab should be an enjoyable experience and should enhance the topics we study in the lecture.

LABORATORY SCHEDULE: (Subject to adjustment)

<u>Date</u>	<u>Exp #</u>	<u>Assignment</u>
N-1/19 D-1/20		Laboratory orientation, Safety orientation, Safety quiz Introduction to basic measuring devices used in the laboratory
N-1/26 D-1/27	1	MEASUREMENTS AND THE METRIC SYSTEM - must have goggles/safety glasses for this class.
N-2/2 D-2/3	2	Check into lab. HEAT TRANSFER AND SPECIFIC HEAT CAPACITY (with supplemental handouts)
N-2/9 D-2/10	3	PHYSICAL AND CHEMICAL PROPERTIES OF SUBSTANCES
N-2/16 D-2/17	4	MIXTURES AND PHYSICAL SEPARATION
N-2/23 D-2/24		Periodic Table Exercise
N-3/2 D-3/3		Lab exercise – will cover material from the first several weeks of lab.
N-3/9 D-3/10		Nomenclature practice
N-3/23 D-3/24	5	CHEMICAL CHANGES AND REACTIONS
N-3/30 D-3/31		TBA

N-4/6 D-4/7	6	CHEMICAL REACTIONS AND EQUATIONS
N-4/13 D-4/14	7	HYDRATES, PERCENT COMPOSITION, AND FORMULAS
N-4/20 D-4/21	8	STOICHIOMETRY OF CHEMICAL REACTIONS
N-4/27 D-4/28		Check out of Lab and COMPREHENSIVE EXAM

CHEM 1105 SURVEY

Name _____ Major _____

How do you want to be addressed in class? _____

Phone _____ e-mail _____

Have you ever taken a chemistry course? _____ When/Where? _____

Have you ever taken an algebra course? _____ When/Where? _____

What level algebra was this course? _____

What grade do you expect to earn in this class? _____

Why are you enrolled in this class?

How do you “feel” about working in a chemistry laboratory?

How do you “feel” about handling chemicals?

What does the word “chemical” mean to you?

Do you have any questions about how the laboratory class will “work”?