

INTRODUCTION

Chemistry 112 is a continuation of Chemistry 111. It is much more problem oriented than CHEM 111. Diligent and responsible attention to the course requirements and regular completion of all assignments are essential to get a passing grade in the course.

Get into good study habits early by keeping up with the reading assignment and homework. It is best to allocate a certain number of problems each day to keep up with the homework. The practice gained by doing the problems will be most beneficial for the exams and quizzes. KEEP UP WITH THE MATERIAL IN THE COURSE ON A DAY-BY-DAY BASIS, RATHER THAN PUT IT OFF UNTIL JUST BEFORE THE EXAM. Please take advantage of my availability during my office hours or by appointment.

COURSE MATERIALS REQUIRED

1. Chemistry by Flowers, Theopold, Langley and Robinson; OpenStax, 2019,
The book is available in web view and PDF for free. You may purchase a hard copy on Amazon for US\$ 50.
<https://openstax.org/details/books/chemistry-2e>
2. A calculator that has log, ln, 10^x , and e^x functions
3. I will send the pdf files of the experiments
4. Lab Notebook: Must be bound (no ring binders) approximate size 7.5 x 9.5", quadrille **ruled**. Carefully follow the instructions for the laboratory notebook on pages 8 through 10 of the laboratory manual.
5. Lab Safety Goggles: Available in the bookstore or in the chemistry lab prep room. You must wear goggles whenever you are in laboratory, even if just visiting.

Problems will be assigned in class.

COURSE SCHEDULE

<u>Chapter</u>	<u>Topics</u>
12	Chemical Kinetics
13	Chemical Equilibrium
EXAM I	Chapters 12, 13.
14	Acid-Bases Equilibria/Buffers/Acid-base Titrations.
EXAM II	Chapter 14
15	Solubility and Complex Ion Equilibria
16	Thermodynamics (Spontaneity, Entropy, and Free Energy)
EXAM III	Chapters 15 & 16
18	Electrochemistry
19	Nuclear Reactions
20	The representative elements
EXAM IV	Material covered since Exam III
FINAL EXAM	COMPREHENSIVE WEDNESDAY, MAY 3, 8-10 am

GRADING SYSTEM

4 Mid-term Exams	400 pts
Quizzes	200 pts
Final Exam	200 pts
Laboratory	<u>200 pts</u> [9 Prelab-45;6 lab reports-84;3 unknowns-60;notebook-11]

Total Points **1000 pts**

<u>Letter Grade</u>	<u>Percentage</u>
A	90 - 100%
A-	87 - 90%
B+	84 - 87%
B	80 - 84%.
B-	77 - 80%
C+	74 - 77%
C	70 - 74%
C-	67 - 70%
D+	64 - 67%
D	60 - 64%
D-	57 - 60%
F	below 57%

*** You need to obtain 360/600 in the midterm and quizzes
AND must have completed all the labs to pass the course**

Tentative Lab Schedule:

January 19 – laboratory safety. Check into lockers.

January 26 - Lab 1: Kinetics Part A. (Exp. 15)

February 2 – Kinetics Part B. (Expt.15)

February 9 – Lab-2: Qualitative analysis, Unknown I. (Exp. 33 -35).

February 16 – Qualitative analysis, Unknown I continued (Exp. 33-35)

February 23 – Lab 3: Equilibrium Constant using UV-VIS

March 2 – Lab 4: Le Chatelier's Principle in Equilibrium (Expt.14)

March 9 – University holiday. No labs this week.

March 16 –Lab 5: Titration Curve and K_a of a weak acid (Expt.19)

March 23 – Lab 6: Qualitative analysis, Unknown II (Expt.36-37)

March 30 – Qualitative analysis, Unknown II, continued (Expt.36-37)

April 6 – Lab 7: Penny's worth of chemistry (Exp. 28)

April 13 – Lab 8: Electrolysis (Exp. 24)

April 20 – Lab 9: Qualitative analysis, Unknown III (Exp. 38)

April 27 – Complete Qualitative analysis, Unknown III and Checkout

COURSE POLICIES

1. There will be lecture quizzes given every Friday during class time.
2. Please see the lab syllabus/policies/grading in the syllabus.
3. All students will take the examinations and quizzes as schedule. Other than health problems (**that require a written, signed excuse from a doctor**), excused absences will only be considered **before** the scheduled exam. There will be no make-up quizzes. Percentage from the final exam will be used for excused quiz absences.
4. Plagiarism and copying are expressly prohibited. It will result in a zero grade for the assignment or a failing grade for the course.
5. **Class attendance is required.** It should be recognized that missing more than one to two days of a chemistry course is most unwise due to the pace of the course and the amount of material covered. It is the student's responsibility to learn the material covered in class.

Millersville University and its faculty are committed to assuring a safe and productive educational environment for all students. In order to meet this commitment, comply with Title IX of the Education Amendments of 1972, 20 U.S.C. §1681, et seq., and act in accordance with guidance from the Office for Civil Rights, the University requires faculty members to report to the University's Title IX Coordinator incidents of sexual violence shared by students. The only exceptions to the faculty member's reporting obligation are when incidents of sexual violence are communicated by a student during a classroom discussion, in a writing assignment for a class, or as part of a University-approved research project. Faculty members are obligated to report to the person designated in the University Protection of Minors policy incidents of sexual violence or any other abuse of a student who was, or is, a child (a person under 18 years of age) when the abuse allegedly occurred.

Information regarding the reporting of sexual violence, and the resources that are available to victims of sexual violence, is available at <http://www.millersville.edu/socialleg/title-ix-sexual-misconduct/index.php>.