

Dr. Rajaseelan
CAPUTO-213; Ext. 3784 Course Syllabus & Class Schedule
Office Hours: M, W, F: 8-8:50 am ; TH: 2:10 -4 pm
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Spring 2022

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	Chapters 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 4, 8-10 am

GRADING SYSTEM

4 Mid-term Exams	400 pts
Quizzes	200 pts
Final Exam	200 pts
Laboratory	<u>200 pts</u> [8 Prelab-40;5 lab reports-80;3 unknowns-60;notebook-20]

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 20 – laboratory safety. Check into lockers. Lab 1: Kinetics Part A. (Exp. 15)

January 27 – Kinetics Part B. (Expt.15)

February 3 – Le Chatelier's Principle in Equilibrium (Expt.14)

February 10 – Qualitative analysis, Unknown I. (Exp. 33 -35).

February 17 – Qualitative analysis, Unknown I continued (Exp. 33-35)

February 24 – Qualitative analysis, Unknown II (Exp. 36-37)

March 3 – Qualitative analysis, Unknown II continued (Exp. 36-37)

March 10 – University holiday. No labs this week.

March 17 –Titration Curve and K_a of a weak acid (Expt.19)

March 24 – Qualitative analysis, Unknown III (Expt.38)

March 31 – Qualitative analysis, Unknown III, continued (Expt.38)

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

April 14 – Electrolysis (Exp. 24)

April 21 – Complete Qual. Analysis.

April 28 – Checkout

COURSE POLICIES

1. There will be lecture quizzes given every Friday during class time. In addition, there will be Attendance/Chat quizzes given during class time on other days.
2. Please see the lab syllabus/policies/grading in the syllabus provided by your lab professor Dr. Albert.
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/socialeq/title-ix-sexual-misconduct/index.php>.

TUTORING HELP

Millersville University is pleased to announce a new partnership with Smarthinking to help students this semester.

Smarthinking provides students with online tutoring that is fast, simple, and convenient. Smarthinking provides students with easy access to [expert tutors](#) - on demand or by appointment - across a wide range of subjects—available 24 hours a day, 7 days a week. The tutors average over nine years of teaching or online tutoring experience, with 90 percent having master's degrees or PhD's. Smarthinking tutors use a pedagogical method tailored to individual student needs to help, encourage, and involve them in understanding the subject matter.

Millersville is providing this service to enable students who are taking classes online this semester to have access to additional support. This is FREE to students for spring classes.

Key features include:

- Immediate, on-demand or by appointment tutoring in a variety of subjects
- Writing feedback returned within 24 hours for various writing assignments
- Whiteboard interface for easy interaction
- Group tutoring
- And much more!

To log into Smarthinking, students will need to log into D2L, go to the university tab on the navigation bar, hit the down arrow and the link for Smarthinking is found directly under Resources for Student Success.