CHEM 112-Lab Syllabus
Spring 2026
Dr. Maria V. Schiza (Lab Instructor)

Lab Meeting Times: (Lab C) Mon 2-3:50 pm (Caputo 332)
(Lab A) Tue 10-11:50 am (Caputo 332)
(Lab B) Tue 1:15-3:05 pm (Caputo 332)

Office: Caputo 219
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Office Hours: Mon & Wed 10:30-11:30 am
Thu 9:30-10:30 am
Fri 10:00-12:00 pm
*(other office hours by appointment)

Lab Objectives:

1) To provide the student with an empirical insight into the principles of chemistry.
2) To develop an ability in the student to learn and work with a team of peers.
3) To develop in the student an appreciation for safety and environmental sensitivity.
4) To illustrate, in a laboratory setting, the fundamental laws of chemistry.

Lab Materials Required:

- **Lab Manual (no purchase required):** Experiments are from the lab manual "Experiments in General Chemistry", 9th ed., G. S. Weiss, T. G. Greco, L. H. Rickard, Prentice Hall, 2007. **The experiment documents will be distributed electronically in pdf format.**
- **Lab Notebook:** Must be bound (no ring binders) approximate size 7 x 9.5", quadrille ruled. Carefully follow the instructions for the laboratory notebook indicated on pages 2-3 of the syllabus for proper record keeping.
- **Lab Safety Goggles & Attire:** Available in the bookstore or online. You must wear goggles, closed-toed shoes, and clothing that covers your body (especially your legs and middle section) in the laboratory.
- **Scientific Calculator:** a calculator that has log, 10^x, and e^x functions.

Tentative Lab Schedule:

Date	Topic	Experiment	Prelab Quiz
January 20	**Laboratory safety, Check-in to lab drawers**	-------	
January 26/27	Kinetics—Part A	Exp.15	Prelab Quiz 1
February 2/3	Kinetics—Part B	Exp.15, continued	
February 9/10	Le Chatelier's Principle in Equilibrium	Exp.14	Prelab Quiz 2
February 16/17	Equilibrium Constant Using UV-Vis	(handout)	Prelab Quiz 3
February 23/24	Qualitative Analysis, Unknown I	Exp. 33-35	Prelab Quiz 4 on Exp. 33/34
March 2/3	Qualitative Analysis, Unknown I	Exp. 33-35, continued	Prelab Quiz 5 on Exp. 35
March 9/10	**Spring Recess**	**No lab**	

March 16/17	Titration Curve and Ka of a Weak Acid	Exp. 19	Prelab Quiz 6
March 23/24	Qualitative Analysis, Unknown II	Exp. 36/37	Prelab Quiz 7 on Exp. 36/37
March 30/31	Qualitative Analysis, Unknown II	Exp. 36/37, continued	
April 6/7	Penny's Worth of Chemistry	Exp. 28	Prelab Quiz 8
April 13/14	Electrolysis	Exp. 24	Prelab Quiz 9
April 20/21	Qualitative Analysis, Unknown III	Exp. 38	
April 27/28	Complete Qualitative Analysis, Unknown III & **Check-out**	Exp. 38, continued	

GRADING - for the Laboratory

Notebook	11 pts
9 Prelab Quizzes (5 pts each)	45 pts
6 Lab Reports & Post-lab Questions (15, 14, handout, 19, 28, 24)	84 pts
3 Unknowns (Qual I, II, & III)	60 pts
TOTAL LAB POINTS	**200 pts**

LAB POLICIES

Laboratory Notebook - Proper Record Keeping

To properly apply the scientific method, you must record all laboratory observations **(using ink)** in a bound notebook in great and graphic detail.

Table of Contents: The notebook should have a table of contents at the beginning, containing the experiment title, the page on which each experiment begins and ends, and the date(s) during which the experiment was performed. The pages should be numbered, and no pages should ever be removed from the notebook.

For Each Experiment Include:

- The title, purpose (include few sentences), background & safety information, as well as a detailed procedure of the lab to be performed. All those items should be in the notebook before the start time of each experiment. You may also include answers to the prelab questions in your notebook.
- During the experiment you can record your raw data (if data collected is numerical, data tables will need to be constructed).
- Then complete a full sample calculation before you leave the lab. The notebooks have to be initialed at the end of each lab period by me (only when at least one complete sample calculation has been performed - this will be considered in the grade of the lab reports).
- Post-lab questions should be answered in the laboratory notebook.
- **If a laboratory is qualitative, all of the above need to be recorded with the exception of numerical data tables and calculations. In their place, detailed observations are required to be recorded.**

General Advice for Proper Laboratory Notebook Record-Keeping: All recordings need to be **done in ink.** Mistakes are indicated by a single line drawn through them, never by obliterating them beyond recognition. **Observations and data should be recorded directly into the notebook *as you are performing the experiment*.** Do not write on paper towels or scrap paper and transfer to the notebook later. This would defeat the purpose of the notebook as a primary source of data. Organize your notebook beforehand, when possible, by labeling and leaving blanks for experimental parameters that must be recorded, and by making tables for data ahead of time. If you are unsure whether a piece of information should go into the notebook, write it in there. You cannot have too much information. If you have misgivings about the accuracy or precision of the data, or if something went wrong during the experiment, write that in the notebook as well. Later, you will not remember which data you trust and which you do not. **Explanatory notes, units, and labels are always important, as is legibility.**

Prelab Quizzes:

Prelab quizzes will be given prior to the start of each new lab experiment (**during the first 5 minutes of the lab**). Carefully read and understand the experimental background/procedure/safety and plan your lab work before the lab period. You can use your lab notebook for the quiz (open lab notebook quiz). **Most questions in the quizzes will come from the background/procedure/safety and prelab questions of each experiment.**

All students will take quizzes as scheduled. Other than health problems (that require a written, signed excuse from a doctor), excused absences will only be considered **before** the scheduled laboratory. **There are no make-up labs or make-up prelab quizzes, as each week a new lab is set up for CHEM 112.**

Lab Reports:

Lab reports should be neat and written legibly in ink (in the lab notebook). Each experiment should include the following: experiment title, purpose, procedure, data tables, calculations, answers to post-lab questions (for qualitative experiments well documented observations are required instead of data tables and calculations). If an experiment requires the preparation of graphs, those should be entered after the calculations in the lab notebook. **All handwritten work should be legible. Non-legible work will not be graded.** The lab reports will be due a week after the completion of the experiment. An assignment folder will be created on D2L for the submission of each lab report (you can scan the pages from your lab notebook which relate to the particular lab report and then upload those pages as a single pdf file on the designated D2L folder. Credit will be deducted for "late" reports. **All lab reports should be submitted (even if they are late) in order to pass the course.**

Laboratory Etiquette:

Please arrive on time, as you will not be given extra time to finish the prelab quiz and the experiment beyond the designated time. Read about the experiment before coming to lab. It is unsafe and inefficient to read the lab, for the first time, as you are performing the laboratory experiment. There is no prelab quiz during the first week of classes. It is expected that all students will complete all laboratory exercises, and all labs will count toward the final lab grade.

Attendance:

Attendance is necessary in all lab meetings. If you cannot attend lab, due to serious illness or other emergency, you must contact me before the class period begins.

Use of Artificial Intelligence (AI) / Plagiarism & Copying Statements:

AI tools may be used to assist with brainstorming and research, but the final work must be your own. You are responsible for verifying the accuracy of any information generated by AI. **You must include a disclosure statement outlining how you used AI tools.**

Plagiarism and copying are expressly prohibited. If you secure information from another person or source and do not acknowledge it in writing in your laboratory report (by using a statement or the source reference), you will receive a grade of zero for that work.

CHEMISTRY PEER LEARNING HOURS – SPRING 2026

- Tues. 4:00-6:00 pm in Caputo 211
- Wed. 4:00-6:00 pm in Caputo 211
- Thur. 4:00-6:00 pm in Caputo 211

Stop in and Work on Chemistry!
No need to make an appointment simply come work on chemistry with your peers and get help from experienced tutors.

Starting January 27th and continuing through the Spring semester.

Contact Dr. Raiaseelan - Edward.Raiaseelan@millersville.edu with any questions/concerns.

Title IX Statement
Millersville University and its faculty are committed to assuring a safe and productive educational environment for all students. In order to meet this commitment and to comply with Title IX of the Education Amendments of 1972 and guidance from the Office for Civil Rights, the University requires faculty members to report incidents of sexual violence shared by students to the University's Title IX Coordinator. 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 sexual violence or any other abuse of a student who was, or is, a child (a person under 18 years of ag) when the abuse allegedly occurred, to the person designated in the University Protection of Minors policy:
https://www.millersville.edu/policies/pdf/administration/protection-of-minors
Information regarding the reporting of sexual violence and the resources that are available to victims of sexual violence is set forth at: www.millersville.edu/titleix