

**CHM 102 – LABORATORY FOR CHEMISTRY 101
SYLLABUS – SUMMER 2019**

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Office hours: appt via Starfish

Meetings TWTh 10:00 AM – 12:45 PM
Sections *Laboratory Instructors*
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Course Description

Chemistry 102 is the laboratory course that accompanies the Chemistry 101 lecture. Credit for CHM 101 or concurrent enrollment in CHM 101 is a prerequisite to this lab course. Specific information regarding the course is given below.

First day of classes

All students must attend the first laboratory session to complete the safety training and several required paperwork or will be dropped from the lab.

Required Laboratory Materials

- CHM 102 Laboratory Manual (URI Bookstore)
- Safety equipment: goggles/safety glasses, knee-length lab coat, nitrile gloves (Chemistry stockroom, Beaupre 180), and shoes that completely enclose your feet.
- A scientific calculator (with logarithm and exponent functions) and pen (black or blue)

Course Set-up

The lab is divided into 3 parts. First, your TA will administer a concept review quiz at the start of class that tests your understanding of the previous day's experiment. Questions regarding the material for the concept review should be addressed earlier, so do not expect your TA to answer questions just before you start the review.

Once you have finished the concept review quiz, your TA will hold a recitation on the concepts that will be used for the current experiment and for the recitation problems that will be done in lab. You can ask your TA any questions you like about this material during your lab so that you have a good understanding of it before you take the concept review the next day. Some of this material may not have been covered in the lecture yet, so this is your chance to get more individualized attention than you would in a lecture class.

Finally, you will perform the lab experiment. At this time, your TA is available to help you set up equipment and answer questions pertaining to the current experiment or the questions from the recitation. The TA cannot review any graded work at any time during the lab, so if you have questions regarding anything but the current experiment, please email the TA later to set up a time outside lab to discuss your concerns.

Teaching Assistants

Your TA will have 1-hour office hours twice a week at the Chemistry Learning Center, Beaupre 115. The schedule will be posted in Sakai as soon as it is available. If you need help with the prelab, concept review information, or performing the lab calculations, you can see either of the two TAs teaching the course this summer. Do not wait to review the conceptual material until just before lab. Get help well before you need to hand in your results or do the concept review.

Grading Policies

Your course grade will be calculated as follows:

	Points per item	% of Grade
Prelabs (10)	10 points	10 %
Recitation Problems (10)	10 points	10 %
Lab Reports (10)	100 points	60 %
Lab Final (Practical and Written)	100 points	20 %
Total		100 %

Prelabs: (10 pts)

Each experiment has a prelab that must be completed before the lab and handed in as soon as you step into the lab. The purpose of the of the prelab is to ensure that you have read the lab thoroughly, understand the general concepts behind the lab, know the safety precautions that should be followed, and are able to perform the calculations given in the experiment. If you have any questions on

any of the material in the experiment, see your TA before your lab. If you do not have your prelab to hand in for that day's experiment, you will not be allowed to do the experiment that day.

Recitation Problems (10 pts)

You will be given recitation problems to complete during your lab once your TA has finished giving the recitation lecture. You can work on them during lab once you have completed the experiment. They must be completed correctly to receive credit. You can ask for help with the problems, but since these problems will be similar to those on the concept review given the next day, you should use the lab time wisely to learn the material and not try to leave early. Ask your TA to check them before you leave the room. If you do not have your TA check to make sure that your concept review questions have been completed correctly before leaving lab, you will receive a zero for that set of questions.

Lab Reports: (100 pts total)

The Lab Report includes the experimental procedures and data from the previous lab as well as the results table that you generate from the calculations section of the experiment. You will use these portions of the experiment to complete the concept review at the start of the next lab session. When you are finished with the concept review quiz, all three sections will be handed in together and will be graded as a single report. A grading rubric is included with each section of the report so you know exactly where you lost points.

- ***Experimental procedures and data (20 pts)***

This is the work that will be done during your lab time. Be sure to use correct significant figures and units on all values. Complete all the sections carefully since you will use this data for your concept review. Have your TA sign the data when you are finished so that you get credit for attending the lab. **A lab technique grade will be incorporated into this section.** If any unsafe or unprofessional behavior is observed by your TA, chemistry faculty or a member of the stockroom staff, lab technique points will be deducted from your grade. In addition, if you leave the lab without cleaning your lab space or lab equipment, you will lose lab technique points.

- ***Results table (20 pts)***

The results table must be filled in before your next lab using correct significant figures and units. It contains spaces for all the calculations given in the lab. You will be allowed to use this table for your concept review, so be sure that it is complete and that your numbers are reasonable. See your TA if you have any questions on any of the calculations. You will be expected to perform the same calculations on your concept review.

- ***Concept review (60 pts)***

Each lab, you will answer questions regarding the previous lab's experiment. You will be expected to do the calculations on your own, and you will NOT be allowed to use the written instructions given in the calculations section of the lab manual. You are allowed to use the data sheet and your results table. You can use a calculator for questions that require numerical answers. The topics covered in the concept review are given at the end of each experiment. You will not have the written questions ahead of time, so be sure to review the material in the experiment before you come to lab.

Lab Final (100 pts)

The lab final consists of two parts: the lab practical and the written part. The lab practical involves a series of stations that require you to answer questions about lab equipment, demonstrate techniques learned in the lab, and may also include remembering your observations from the experiments. The written part is similar to the concept review quizzes, where you will need to perform calculations. You will need your lab coat, gloves and safety glasses as well as a calculator.

All work handed in during lab is to be graded and returned to you on **Tuesday of the following week**. The teaching assistant assigned to your lab is responsible for all the lab grading. See your TA if you have questions regarding the grading in your prelab and lab report. No changes in grades will be made if the problem is not addressed within **48 hours** of receiving your graded material back from your TA. If you still have questions after talking to your TA, contact the course director within one week of receiving the graded lab.

Do not compare the grading on your work to that of a student with a different TA. All teaching assistants grade slightly differently. At the end of the course, the course director evaluates the grades of each TA and will assign a scale (if necessary) to each section to assure that the overall grades of the teaching assistants will be similar.

Course/Lab and Departmental Policies

Disability Accommodations

Any student with a documented disability is welcome to contact me as early in the semester as possible so that we may arrange reasonable accommodations. As part of this process, please be in touch with Disability Services for Students Office at 330 Memorial Union, 401-874-2098 (<http://www.uri.edu/disability/dss/>).

Missed Labs

The course schedule is set up for 10 laboratory experiments, a Lab Final, and an 11th makeup experiment. Students are required to complete 10 experiments and the Lab Final. Students who miss a lab **MUST** complete the makeup experiment. Students are allowed only 1 makeup lab. Steps on what to do if you miss a lab are given below. The makeup lab cannot be used to replace a lower lab grade. You are responsible for the missed material on the Lab Final so be sure you are familiar with the missed experiment. If you miss a second lab, you **MUST** have documentation from either student services, or a doctor's note on professional letterhead to be allowed a second makeup. The documentation must include the date you missed the lab. **Students who do not complete 10 experiments and the Lab Final can expect to receive a failing grade in the course.**

Late to lab

If you are late to lab, you will lose time on the concept review quiz so you will have to hand in whatever you can finish in the remaining time. No makeup will be given. If you are more than 30 minutes late, you will not be allowed to perform the lab for that day and will have to sign up for a makeup.

Injuries, Illness or Under the Influence

If you are injured or become ill during the lab, you can leave the lab without penalty. You will then need to discuss makeup options with your TA. If you enter your lab under the influence of drugs or alcohol, your TA has the obligation to immediately remove you from the lab without a makeup option.

Use of a Cell Phone in Lab

Cell phones must be turned off when in lab. Unless there is an emergency in the lab, if you are seen using a cell phone in your lab you will immediately be asked to leave and will not be allowed a makeup. If you leave the room to answer a cell phone call or a text message, you will not be allowed back in to complete the experiment and will not be allowed a makeup.

Stockroom Policies

If any equipment you use in lab is broken or missing at checkout at the end of the course, you are responsible for the cost of the equipment and will be issued a lab bill. All replacement items and bills must be processed through the Chemistry Department stockroom. All transactions must be via a RAM card, not cash. Your TA and the course supervisor cannot change or remove a lab bill, so all billing questions must be addressed through the stockroom directly. Additional stockroom policies and hours may be found on the department website, www.chm.uri.edu under the "For Current Students" tab in the "Chemistry Stockroom" section.

Plagiarism

Any signs of plagiarism, (identical or near identical information from another source), will be taken very seriously. If plagiarism is suspected on any graded work, you may receive a zero for the submitted material. Make sure that all submitted material is your own work. A second instance of plagiarism will be addressed through the office of student life and handled on a university level. Any suspected incidences of plagiarism will be dealt with very severely. See the departmental plagiarism policy in the lab manual for more detailed information.

Laboratory Safety

NOTHING is more important than the personal safety of the occupants of the laboratory. Any student who deliberately or carelessly disregards a written or oral safety instruction will be expelled from the laboratory and will receive a grade of zero for the experiment. A student who is expelled twice from the laboratory for safety violations will automatically receive a failing grade in the course. Careless disregard of safety instruction includes (but is not limited to) the following:

- Any student who improperly disposes of chemical waste (pours solutions into laboratory sinks, or places solid waste into a garbage can).
- Any student who does **NOT** have the following personal protection items: safety glasses or goggles, lab coat (clothing which covers the arms to below the elbow and legs to below the knee), protective (nitrile) gloves (when required), shoes which fully enclose the foot (no open toe or heel) and socks.
- Any student who has **NOT** completed the Prelab.

Makeup Procedure for Missed Experiments

1. If you miss a lab, sign up for the makeup lab in the Stockroom (Beaupre 180)
2. The day after your missed lab:
 - a. Take the concept review that you would have taken during your missed lab.
e.g. If you missed Lab 3, will take the concept review for Lab 2 during Lab 4.
 - b. Ask your TA for a copy of the concept review for the experiment you missed so you have it to study from for the lab final.
It is for study purposes only and will not be graded.
3. Before the Makeup Lab:
 - a. Read the experiment carefully and get any help you need ahead of time since you will do the concept review the same day you do the experiment.
 - b. Complete the Prelab.

4. On the day of your Makeup Lab:
 - a. Hand in the Prelab when you enter the lab.
 - b. Perform the experiment.
 - c. Do all calculations. This is the only time you can ask questions regarding the lab.
 - d. Complete the concept review
 - e. Staple the concept review to the data and results table and submit the entire report to your TA.

CHM 102 Schedule of Experiments – Summer 2019

<i>Week</i>	<i>Date</i>	<i>Day</i>	<i>Experiment</i>
1	5/20	M	
	5/21	Tu	Course info; check-in; Safety
	5/22	W	(Labs canceled)
	5/23	Th	Experiment 1. Density
	5/24	F	
2	5/27	M	
	5/28	Tu	Experiment 2. Paper Chromatography
	5/29	W	Experiment 3. Zinc Stoichiometry
	5/30	Th	Experiment 4. Acid-Base Titration
	5/31	F	
3	6/3	M	
	6/4	Tu	Experiment 5. Redox Reactions
	6/5	W	Experiment 6. Gas Laws
	6/6	Th	Experiment 7. Calorimetry
	6/7	F	
4	6/10	M	
	6/11	Tu	Experiment 8. Spectrophotometry
	6/12	W	Experiment 9. Molecular Models
	6/13	Th	Experiment 10. Colligative Properties
	6/14	F	
5	6/17	M	
	6/18	Tu	Makeup Lab
	6/19	W	Lab Final
	6/20	Th	
	6/21	F	