

# CHEMISTRY WORKSHOP

CHEM 155-01 FALL 2021

01: Monday 2:30-6:20 PM

INS-2190 (Institute Hall)

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This is a workshop course in General Chemistry which will incorporate a number of different attributes including instruction, discussion, laboratory experiments, and group work (both worksheet and lab work). The objectives in this course are many fold. The first is to introduce you to laboratory work, which will include proper technique, proper recording of experiments and data, and how to write up and disseminate your findings. Another objective is to introduce you to modern instrumentation that will be done via discussions, tours, simulations, and lab work. A large emphasis will be on keeping a good lab notebook, understanding and interpreting your results, and being able to succinctly present your findings.

## Course Materials

You must have a carbon copy style laboratory notebook as you will be handing in the *written-on* copy after each lab. – Can be purchased in the bookstore

You are also *required* to purchase and bring to class each week goggles and lab coat. – Can be purchased in the bookstore

All supplemental materials and handouts will be posted on MyCourses. These links can be found under the Content section of the course shell of MyCourses. MyCourses can be accessed directly at <http://mycourses.rit.edu/>. It is important to **check your email** and the announcements in MyCourses routinely.

Lab equipment is communal unless otherwise noted. **If you break something inform an instructor immediately**

A calculator will be useful in many labs and a **laptop computer** is highly recommended and will come in handy for working up data in many labs. One computer per group is all that would be needed. A thumb drive for transferring data will also come in handy.

## COURSE ASSESSMENT

**Your grade will be based off of four criteria: attendance, safety, participation, and lab/assignments.**

Attendance	10%
Safety	10%
Participation (class/group)	10%
Lab/assignment	70%

Attendance is mandatory and there are no makeup labs. If you are going to miss a lab for an excused reason you must talk with your instructor at least one period prior to the absence. Attendance also means being on time; points will be taken off for being late. You will start out

the semester will all of your safety points, if we see improper use of personal protective equipment (PPE), improper disposal, or other unsafe practices, points will be removed. Participation refers to class discussions as well as working in your groups, all group members should be an active participant in all labs.

Each lab/assignment will be worth 20 points with the following breakdown:

Abstract*	10 pts
Lab notebook**	10 pts
Signed, dated, and initialed	1 pt
Including all sections	1 pt
Tidiness/readability	2 pts
Observations**	3 pts
Data analysis**	3 pts

Please note that, depending on the experiment – if the experiment makes heavy use of excel, then half of the points will be based on your use of excel. A “live” excel file may be uploaded in my courses at the completion of the experiment and will include

- a. \*\* The data in a format that is annotated to indicate what data is in the columns or on the graph. This will be half the points, i.e. 5 out 10, for the notebook grade
- b. \* The calculations and results in excel that is dependent on the data. This will be half the points, i.e. 5 out of 10, for the abstract grade.

Note that the data, calculations and results for a and b can be on the same sheet. The remainder of the points will definitely be taken from:

- a. The data and descriptions in your hard-copy notebook.
- b. The writing of your abstract. Please refer to the Zoom video and other instructions on how to write an abstract.

The overall grade breakdown is as follows:

A: 93-100%	B+: 87-89.9%	C+: 77-79.9%	D: 60-69.9%	F: <60%
	B: 83-86.9%	C: 73-76.9%		
A-: 90-92.9%	B-: 80-82.9%	C-: 70-72.9%		

## **LABORATORY SAFETY**

Lab safety is one of the most important things to learn and follow at all times. You must complete the online lab safety training prior to working in lab. Below are a few important reminders to always keep in mind.

- **Always** wear your goggles any time after you enter the doors of the lab.
- **Do not** touch doors with gloved hands
- **Do not** wear gloves in the hall – even if they are clean
- **Always** wear long pants and closed toed shoes to lab
  - If you do not you will be sent out to get them, remember there are no makeup labs.
- You must finish your online lab safety training prior to working in lab
- If you have an accident notify one of your instructors as soon as possible
- Material Safety Sheets for all chemicals used are in a three ring binder in the lab

## **Cleanliness**

- Safety depends on cleanliness
- Keep your area clean and neat
- If you spill, clean it up appropriately
- If you do not know proper procedure ask
- Do not return chemicals or reagents to their storage containers
- Dispose of waste in their proper containers and fill out the record sheet with the identity and quantity of waste

## **TENTATIVE COURSE SCHEDULE**

<b>Week</b>	<b>Topics</b>	<b>Assignment</b>
1	Introduction, Keeping a laboratory notebook, lab tools	Notebook/abstract
2	Review of units and stoichiometry, working with data in Excel, KnowItAll, and others	Worksheet
3	Avogadro's number	Notebook/abstract
4/5	Kinetics	Notebook/abstract
6	Thermodynamics	Notebook/abstract
7/8	Reactivity: Extraction of copper from wire	Notebook/abstract
9/10	Intro to spectroscopy: How much dye are in sports drinks?	Notebook/abstract
11/12	pKa of an A/B indicator	Notebook/abstract
13/14	Making and using your own pH meter	Notebook/abstract

**Syllabus modification:** Any modification of this syllabus will be distributed in class and via e-mail and as an announcement on MyCourses.

### **Statement on Reasonable Accommodations**

*RIT is committed to providing reasonable accommodations to students with disabilities. If you would like to request accommodations such as special seating or testing modifications due to a disability, please contact the Disability Services Office. It is located in the Student Alumni Union, Room 1150; the Web site is [www.rit.edu/dso](http://www.rit.edu/dso). After you receive accommodation approval, it is imperative that you see me during office hours so that we can work out whatever arrangement is necessary.*