

# Teaching Assistant Handbook

## For 100-Level Chemistry Courses

This handbook provides information on the most common first-year undergraduate Chemistry course policies. Any of the policies and methods described below, however, may be superseded by those of the course instructor. Adhere to the syllabus for any course you are a TA for.

*“Being a teacher is an important task—one of the most important in our society today.”*  
—Carl-Henrik Heldin

“The mediocre teacher tells. The good teacher explains.  
The superior teaches demonstrates. The great teacher inspires.”  
--William Arthur Ward

*“Build a man a fire and he’ll be warm for a day.  
Set a man on fire and he’ll be warm for the rest of his life”*  
—Terry Pratchett


# Course Structure

Before we talk about the TA job itself, let's talk about how the chemistry courses at WSU are organized. This will help you better understand what your students will be doing and what your own role is.

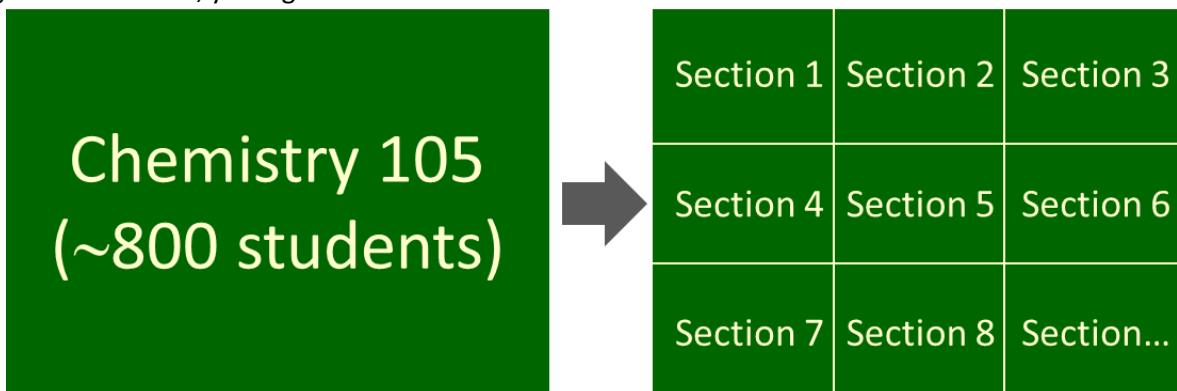
Students sign up for three things when they take a chemistry course:

1. A lecture that meets for an hour three times a week.
2. A recitation (tutorial) session that meets for an hour once a week. This is a time for them to go over and better understand the lecture material.
3. A lab period that meets for 2-3 hours once a week (right after recitation). The experiments they do will help them learn about chemistry and also about science experiments in general.

**Students Sign Up for Three Things When They Take a Chem Course**

		
Lecture	Recitation (Tutorial)	Lab

As many as 900 students might take one of our courses in a semester. That's a heckuva lot of people to try and cram into one lab room, so we break the course up into sections of 24 students each. Students meet as a section for recitation and lab. If you are a graduate student, you'll get two of these sections to look after. If you're an undergraduate student, you'll get one section.



## Lab Report Structure

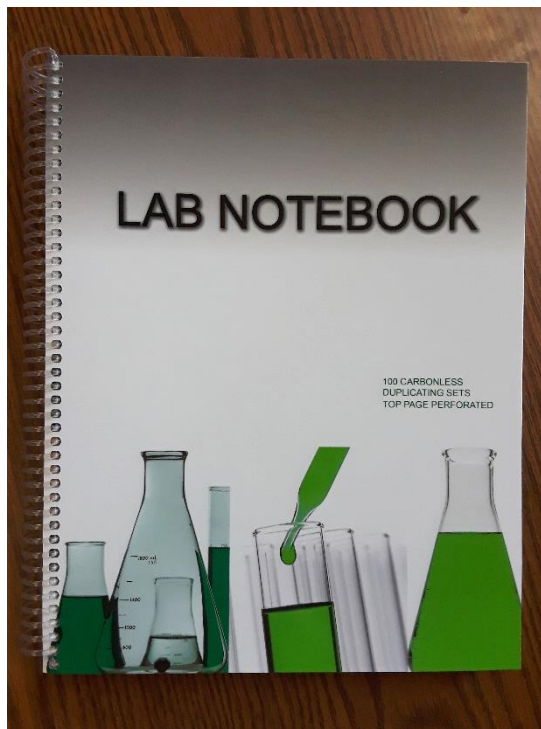
Each experiment your students perform will have a report associated with it that consists of three sections:

1. A Pre-lab. This could take the form of a quiz you will administer during recitation, or will be an online assignment due sometime early in the week.
2. Data due at the end of lab
3. Post-lab due the following week

## Data

Your students will record their data, in pen, in a carbon-copy notebook. This must be a *carbon-copy* book; a “regular” notebook without copy pages won’t do. They can buy one from someone in 319 if they need it.

A carbon-copy notebook.  
They’ll need one of these



As a general rule, we expect their “data” to include a record of everything they did, including equipment they used, as they performed their experiment. Data also includes descriptions of all the reagents they used, solution concentrations, and all measurements and observations they made.

When they’re done experimenting for the day, sign the bottom of their data pages and collect the original copies (not the carbon-copy ones). They have to submit these pages before they leave the lab room. If they don’t get these pages into you before they leave lab, they cannot receive any credit for them.

Signing data pages isn’t just about verifying the student was in lab and performed the experiment. This is also a good chance for you to look at their station to make sure it’s clean and tidy.

## Post-Lab

The post-lab is where your students perform calculations on their numbers, report their results, and answer various questions about their experiment. This assignment will be administered and submitted online.

### *Example*

Post-lab assignments generally follow the same formula. The students are first asked to perform calculations (if the experiment requires them), answer a few questions, and then give a summary/overview of their experiment. The following post-lab questions/topics come from an experiment where the students have to test the effect of adding salt on a solution’s boiling temperature.

## Calculations

1. Calculate the average boiling temperature of your salt solution. Use four temperature points for this.
2. Calculate the average boiling temperature of your DI water. Use four temperature points for this.
3. Use the average boiling points you calculated for your DI water and salt solutions to determine the *actual* boiling point elevation of your salt solution.

## Results & Discussion

1. In one or two sentences tell us what you were trying to accomplish in this experiment. That is, say what the point of the experiment was.
2. Tell us what your experimental approach was (how you did what you did). This is supposed to be a summary of no more than 4 sentences.

# TA Job Overview

## Main Duties

Your job as a TA primarily consists of four things. You have to:

1. **Help your students out during recitation/tutorial.** For the most part you'll answer questions they have on the course material. Some instructors will give you worksheets or other exercises for your students to do. Recitations are scheduled for 50 minutes and you are obliged to hold them for that time.
2. **Get them through lab.** Answer any questions your students have about their experiment, enforce the safety rules, and make sure the room is clean when you're done.
3. **Grade their lab reports.** And do it promptly. Your students rely on the feedback you give them to improve, so it's important you get their reports graded and back to them on-time.
4. **Hold office hours** where you meet with the students on a more individualized basis. "Office hours" is something of a misnomer; you'll actually meet with them in Troy 305 rather than your office. Since office hours are in the same room for all the courses, you will end up helping people from other sections, and even from different courses. If you are not familiar enough with another course's material to assist a student in that course you can ask another TA for help, but don't ignore a student just because they're in a different course from yours.

Graduate student TAs get two sections to look after for the duration of a semester. Since each section meets once a week and you have two of them, you'll host two recitation sessions and two lab sessions a week. You will also have two section's worth of reports to grade most weeks. You'll hold two hours of office hours (in Troy 305) each week.

If you're an undergraduate student, you'll get one section to look after. That's one recitation, one lab, and one section's worth of papers to grade each week. You will hold one hour of office hours.

## Other Duties

Besides the main things just covered, you will also:

1. **Proctor exams.** We have three mid-terms and one final. The mid-terms are always at 6:00 PM on a Thursday. You'll have to be here at 5:30 to help setup for them.
2. **Attend meetings.** We have these at 5:00 every Monday. We will talk about what you're going to do in recitation that week, what you need to know for lab, and miscellaneous course-related news.
3. **Attend lecture.** Do you really remember *everything* you learned in your first year undergraduate chemistry course? If not, lecture is a great place to review it. You may also be needed to help hand out papers, help the students with their laptops and tablets (they'll need these for in-class activities), and help students with in-class problem solving exercises delivered by the instructor.

# What We're Looking for in a TA

Here's a summary of the biggest things we want to see our TAs doing in each of the duties we just outlined; our expectations, if you will. Besides these, there are other rules and information you need to know that are explained elsewhere in this manual, but *if you do nothing else do these*:

## Tutorial

1. Check that your students have completed their pre-lab assignment. There's more information on how to do this below in the "Lab Structure and Grading" section.
2. Show up on time.
3. Understand the material well enough to help your students out.
4. Some instructors will give you some specific things they want you to do or go over. They may give you a worksheet for you to help your students with, but this can vary by course.

## Lab

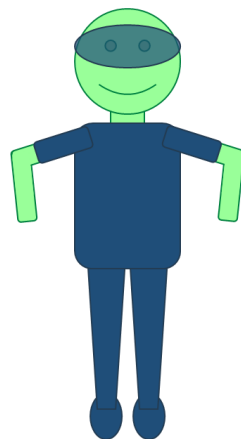
The lab part has a few facets, mostly relating to safety and room upkeep.

### 1. Keep the dress code enforced

Chem 101 and 105 students have to wear goggles at all times when they're in their lab room—even when they're done experimenting—they must wear a lab coat, and the rest of their clothing must cover the entirety of their legs and feet. This is for "wet" labs; if they're doing a worksheet or anything without glassware, they can wear pretty much whatever they want.



They have to keep their goggles on  
Always



Every part of their body in dark  
blue must be covered

### *What if my students aren't dressed right?*

If you have a student whose clothing doesn't cover them like it should, they can borrow a pair of pants or a lab coat from Nikki Clark in 319A. If they need a pair of shoes they can borrow them from the stockroom, room 323. They could also go home and change, but that will cost them lab time.

### *What if my students don't have goggles?*

If they need goggles send them to Nikki Clark in 319A, she can sell them a pair (that's *sell*, not *loan*; they'll need cash). GCS will also sell these in 318 or 319 the first couple weeks of the course. They could also go home to get the ones they forgot to bring, but that will cost them lab time.

### *What if my students are wearing safety glasses instead of goggles?*

They need *goggles*, not glasses. If they don't have goggles, see the answer to the last question.

This rule also applies to you, the TA. If you need goggles, you can get them from the main stockroom (you don't have to buy your own).



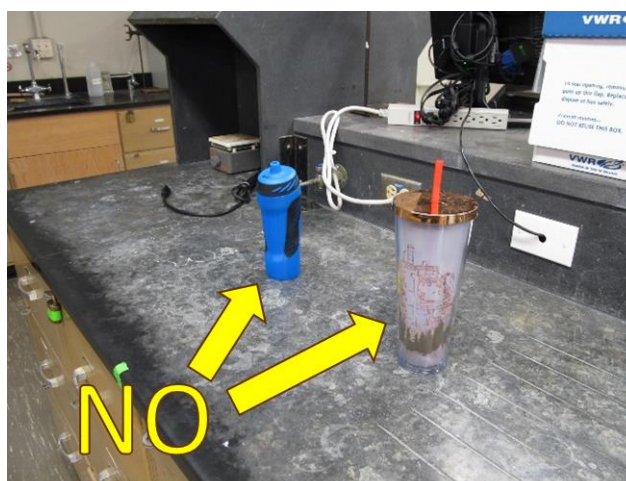
### *What if my students won't keep their goggles on in lab?*

Now we come to one of the most common “trouble-areas” you'll have to watch out for: students who don't keep their goggles on. **First**, give them a gentle warning or reminder. **Second**, give them a sterner warning, one that lets them know they'll lose points if you see their goggles off again. **Third**, take a course point off their lab report<sup>1</sup>. **Fourth**, if they still don't get the message, tell them to leave.

If your student has a hard time wearing them because they're fogging up, we have some anti-fogging stuff they can apply in the stockroom.

## **2. Don't let them have any food or drink—including water bottles—in lab.**

It's OK if they keep their water bottles in their backpacks, but we want them out of sight.



<sup>1</sup> Lab reports are generally out of 20 or 25 points, and there's usually something like 1000 points in the whole class, so one point won't be enough to break them. It will get their attention, though, like you want it to.



### 3. Keep the place clean

#### *Student Drawers*

When your students are done, you'll need to sign the last page of their data and collect it before they leave. Use this time to look in their equipment drawer and make sure everything is neat and tidy. This is important because these drawers are shared between about 8 different people/sections.

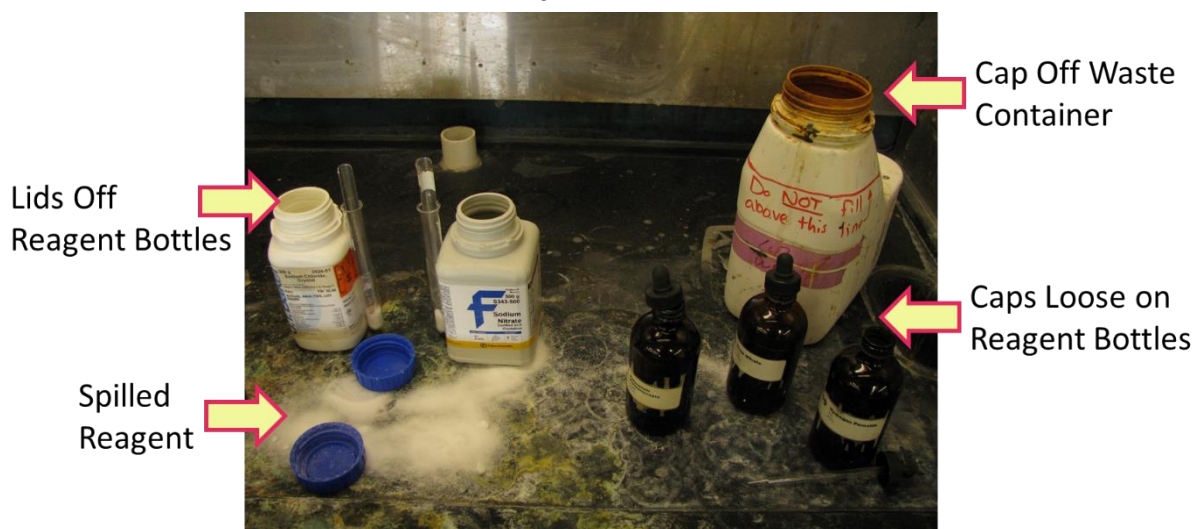
Our student drawers have placemats in them to show where most things should go and, more importantly, to help you and the student know whether anything's missing.



#### *Main Fume Hood*

Make sure reagents are replenished, waste is disposed of, and lids are on everything at the end of your lab period. You don't even have to clean the hood up yourself—you can “volunteer” a student to do it for you.

#### **Please don't leave your hood like this**



### 4. Answer your students' questions

We'll give you all the information we can to make you smart enough to answer your students' questions and help them get through lab. Each experiment has a document (on the course webpage) that will tell you about the theory behind that experiment and its procedure; if you read this document, you'll know 92%-

96% of everything you need to. For the rest, we'll supply you with TA notes each week. And if you run into something you don't know, you can always ask the lab supervisor or stockroom manager.

## Grading

Get grades for each experiment entered in the course website no more than two weeks after your students performed that experiment. There's a section below on how to enter grades into a course webpage below. For the grading itself, we'll give you keys that will tell you how many points things are worth.

### Grading Questions You Might Have

*How promptly do I have to grade my student's work?*

Get grades for each experiment entered in the course website no more than two weeks after your students performed that experiment. And remember, your grading doesn't "count" unless you get the grades entered.

*My student's answers don't exactly match the key. What do I do?*

Unless the question only calls for a one-word answer (which is very rare), there's a good chance what your students write won't look just like the answer on the key. In this case, what exactly is worth full, partial, or no credit will be up to you. We will sometimes try to help you by letting you know what kinds of responses are worth partial credit, but it simply isn't practical to anticipate every such answer your students may produce. As a general rule, your average lab score should run around 75%, give or take a few %. If your averages end up higher than this, grade more strictly. If they're lower than this, be more generous.

*My student's work is disorganized and/or hard to follow. How should I handle this?*

Each grading key gives some points for neatness and format. If you have trouble reading your students work because it's messy and/or disorganized, subtract as many of these as you feel is warranted. If it's so bad you can't find some things we assign points to, take those points off as well.

*Some of my students didn't understand what they were supposed to do. Should I give them a pass?*

Whenever a student does something incorrectly, such as not taking measurement right or messing up their calculations, it's usually because they didn't read the experiment's background and/or the appendices that describe how to use the equipment. That's not an acceptable excuse for blowing something on their report.

Having said that, if do you come across an instruction that's ambiguous or confusing, please let someone know so we can correct it. If we have reason to believe a student missed something because they didn't understand an instruction, we can work something out grading-wise.

*How detailed do my grading comments have to be and how many should I make?*

This is at your discretion, but do include at least some comments for everything you grade. Working with numbers, significant figures, and units is a prominent aspect of this course, so definitely let the students know if they lost points for insufficient significant figures and/or missing units.

Coming back to the last question, if a student missed something because they didn't read the background, it may be a good idea to say something like "read the background" in your comments.

## Office Hours

1. Understand the material well enough to help your students out.

2. Help students from other courses. Maybe you'll have the knowledge you need to do this, maybe you won't, but never brush off a student just because they're in a different course from the one you're assigned to. You'll be in the same room with other TAs that can help you or the student.

## **Proctoring Exams**

1. Show up on time
2. We'll give you a list of instructions to follow when the time comes. Follow them.

## **Weekly Meetings**

1. Show up on time
2. Depending on the course, you'll get a sheet of instructions sometime before the meeting (usually sometime the week before). Read these before the meeting.

## **Attend Lecture**

1. Attend Lecture. Be ready to assist students with online problem-solving exercises.

## Expectations for Continued Employment

As a paid employee of the Chemistry Department, you are expected to meet all the expectations and diligently execute all the various duties we've outlined so far. Each instance of not meeting our expectations will be noted in our records. If you're a graduate student, this will include a documented report that will be sent to the Director of General Chemistry, the Laboratory Supervisor, the Associate Chair for Graduate Studies, the Graduate Coordinator, and your Faculty PI. Three occurrences of not meeting our expectations will be considered as grounds for termination in the current semester of employment by the Department as a TA, or for refusal of employment in future semesters. TA behaviors that are considered to be "not meeting expectations" include:

- Missing office hours without notifying the lab supervisor or course professor
- Missing tutorial without notifying the lab supervisor or course professor
- Missing laboratory without notifying the lab supervisor or course professor
- Falling behind in post-lab report grading by more than two weeks
- Missing TA meeting without notifying the lab supervisor or course professor
- Missing a class exam without notifying the lab supervisor or course professor
- Committing safety violations in the laboratory
- Not enforcing safety regulations for students in the laboratory
- Failing to maintain lab cleanliness, or restocking glassware and reagents at the end of lab
- Failure to actively supervise students in the laboratory

We will have you sign a contract at the beginning of the semester that will, in essence, say you will meet all our expectations and understand the consequences of not doing so.

Keep in mind your funding as a graduate student may depend on your ability to retain your TA position.

# Course Webpages

As of the Fall 2021 semester, we use **Canvas** for our Learning Management System (LMSs, the thing that acts as the courses' webpages) to host course content, including lab assignments.

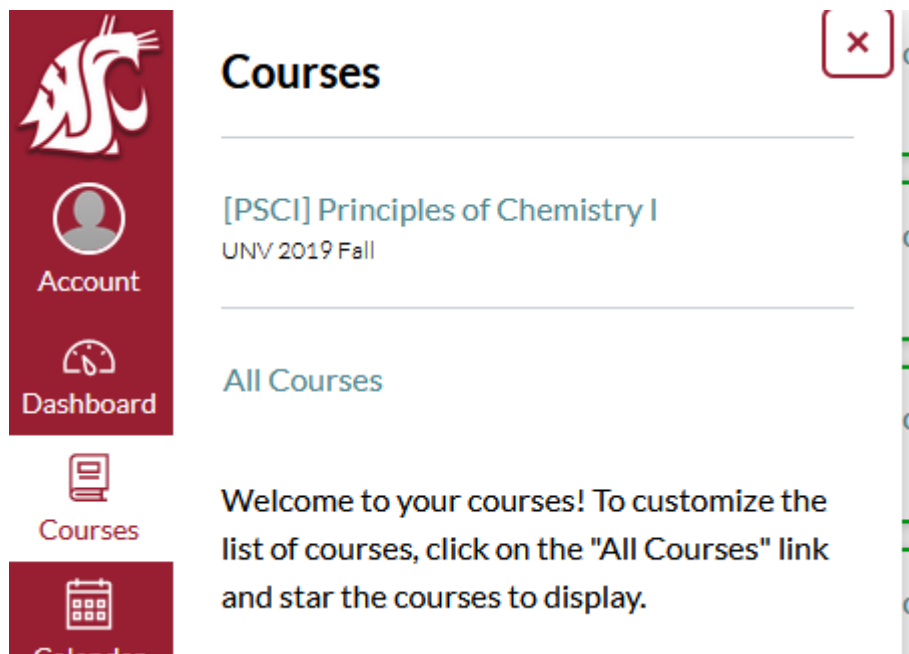
## Grading In Canvas

### Where Stuff Is

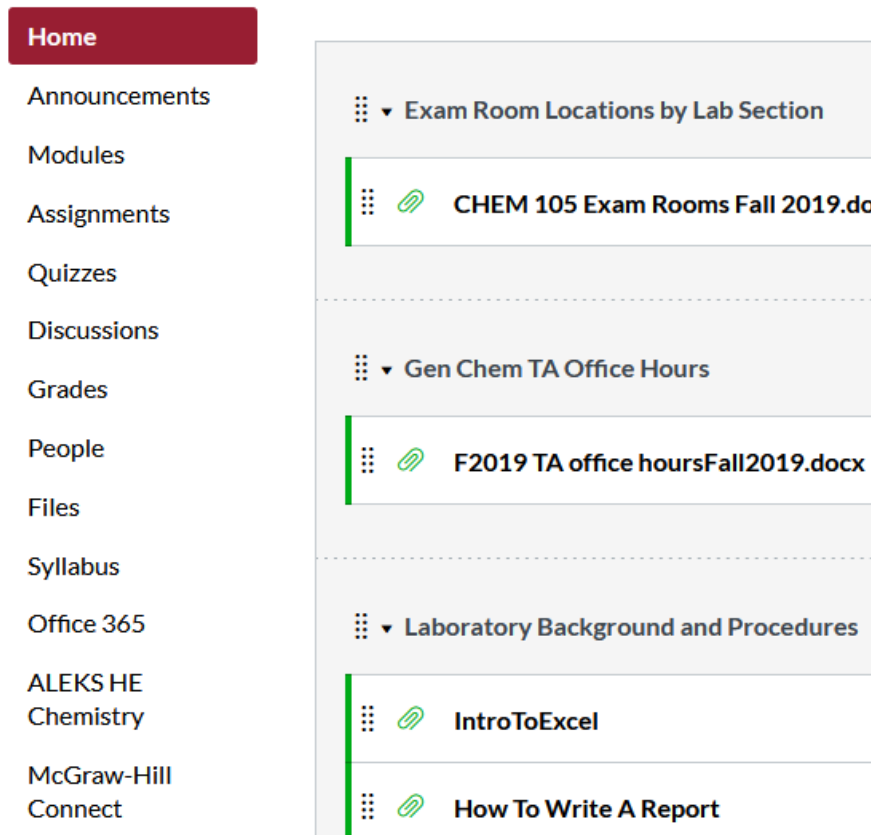
First, go to the following webpage and log-in to Canvas:

<https://canvas.wsu.edu>

Once you've logged in, go into "Courses" on the left side of the page. A window will appear with the courses you are registered for in it. Select the Chem course you're TAing for.



You will be taken to the course's homepage. From here you can access things like the assignments your students have to complete (this include lab reports), the gradebook, and assorted documents you and your students will need. Some documents, such as the lab procedures, can be accessed right from the home page.



If you select the **Assignments** link, you will be taken to where the post-lab assignments instructions are. These are the questions your students have to address for their post-lab assignments.

- Home
- Announcements
- Modules
- Assignments**
- Quizzes
- Discussions
- Grades
- People
- Files
- Syllabus
- Office 365
- ALEKS HE  
Chemistry
- McGraw-Hill  
Connect

The screenshot displays a user interface for a course management system. At the top, there is a navigation menu with a dropdown arrow and the text "Lab Reports". Below this, a list of four lab reports is shown, each with a document icon, a title, and a point value. The first report is "Intro to Excel Lab Report" (25 pts), the second is "Nomenclature Lab" (25 pts), the third is "Lab Measurements Lab Report" (25 pts), and the fourth is "Limiting Reactant Lab Report" (25 pts). Each report entry includes the text "Available Multiple Dates | Due Multiple Dates". Below the lab reports, there is a section header "Assignments" with a dropdown arrow, followed by a large empty rectangular box.














▼ Lab Reports

- Intro to Excel Lab Report  
Available Multiple Dates | Due Multiple Dates | 25 pts
- Nomenclature Lab  
25 pts
- Lab Measurements Lab Report  
Available Multiple Dates | Due Multiple Dates | 25 pts
- Limiting Reactant Lab Report  
Available Multiple Dates | Due Multiple Dates | 25 pts

▼ Assignments

If you click on **Grades** you'll be taken to the course gradebook. It will look something like this:

Gradebook ▾ View ▾ Actions ▾

Student Name	 Intro to Excel Lab Re... Out of 25	 Nomenclat... Out of 25	 Lab Measurements La... Out of 25	
Student Name 02-01043-[PSCI] Principle...	15 	17.1	22.3 	
Student Name 03-01044-[PSCI] Principle...	25 	23.2	25 	
Student Name 02-01043-[PSCI] Principle...	23.8 	21.1	 	
Student Name 02-01043-[PSCI] Principle...	0	0	0	
Student Name 02-01043-[PSCI] Principle...	22.5 	19.1	22.4 	

Individual assignments appear in columns, students in rows. The number in each box is the number of points a student received for an assignment. The icon that looks like a document with an exclamation point in a circle next to it means a student has submitted work for that assignment, but it has not been graded yet.

The colored flags to the left of the numbers in each box tell you what the work's Unicheck (the plagiarism checker) originality percentage range is; in other words, it tells you how likely it is the student submitted plagiarized work.

- Blue = 0% Similarity. There is no chance they copied or had their work copied from someone else.
- Green = 1-24%, meaning the similarity is small and insubstantial. You can safely ignore green flags.
- Yellow = 25-49%, or a medium level. Their work may or may not have been copied. At this range any similarity is more likely to have been falsely flagged than not, but keep your eyes open.
- Orange = 50-74%. There is a high likelihood the student copied someone else's work or someone else copied theirs. With rare exceptions, check these manually (more on this below). What would an exception be? It's not unusual for multiple submission for the Chem 105 Intro to Excel exercise to be orange flagged, even though these submissions were not plagiarized.
- Red = 75-100%. There is a very high likelihood the student copied someone else's work (or had their own copied). Definitely check these.

If you do see an orange or red flag, don't automatically assume the work was plagiarized. The check software isn't foolproof, and two reports that are very similar because of the nature of the assignment (like the Excel exercise) will be flagged with these colors when they are really OK. To manually compare two pieces of work for yourself, see below.

## Grading in Canvas: Method One

Probably the easiest way to access your students' work and grade is to access SpeedGrader via the Assignments area. Starting from the home page, go into Assignments and select the one you want to grade. If you did this for the Limiting Reactant lab, you would see a screen that looks like this:

UNV 2019 Fall

### Limiting Reactant Lab Report

Published Edit

Related Items

- SpeedGrader™
- Download Submissions

181 out of 747 Submissions Graded

SpeedGrader Link here

Write your answers to these in a new Word document. Include a heading with your name, date, and section number at the top of the page. Number your answers with the corresponding question number. Save your document as a PDF and upload here.

Don't re-write the questions when you go to answer these. Just make sure your answers have numbers that match up to the original questions' numbers.

### Analysis & Calculations

- Use the results of the limiting reactant test to determine which salt was the limiting reactant in your original salt mixture. Explain your reasoning.
- Use the data from one of your trials to calculate what percent of your salt mixture by mass was  $\text{CaCl}_2 \cdot 2\text{H}_2\text{O}$  and what percent was  $\text{Na}_2\text{CO}_3$ . You must show your calculations for this. Word has an equation editor you can use to show these calculations. If you are not familiar with this editor, one of the lab folders on the course Blackboard page will introduce you to it.
- Use the data from your other trial to calculate what percent of your salt mixture by mass was  $\text{CaCl}_2 \cdot 2\text{H}_2\text{O}$  and what percent was  $\text{Na}_2\text{CO}_3$ . You don't have to show your calculation this time, just give us the percentages.

Click on the SpeedGrader link on the right side of the screen and you'll be taken to your first student's report for that assignment. The page will look something like this:

Limiting Reactant Lab Report  
Due: Multiple Due Dates - CHEM 105-01

266/816 Graded 14.8 / 25 (59%) Average 1/816 Student Name

Page 1 of 2

Submitted: Sep 17 at 4:21pm

Submitted Files: (click to load)

9.64% Chem lab report 2 filename .pdf

Assessment  
Grade out of 25

Assignment Comments  
Add a Comment

Submit

Click this to view Unicheck Report, especially if the flag is orange or red

Student Name

Limiting reactant chem report

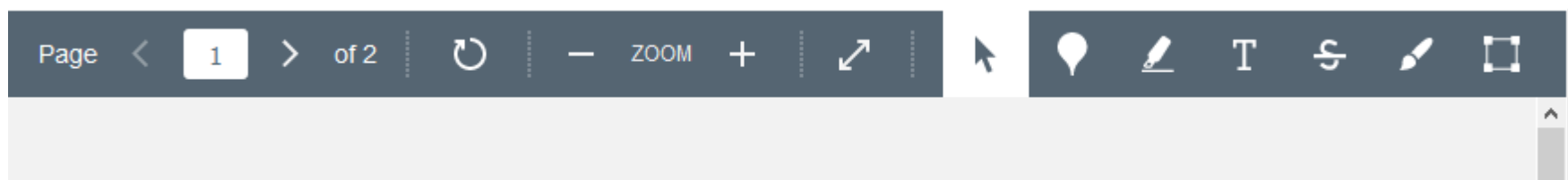
Trial 1

$(\text{Mass Paper} + \text{Precipitate}) - (\text{Mass of paper}) = \text{mass of precipitate}$



To view the work's Unicheck similarity report, click on the colored flag. You will be taken to a page that highlights what was similar and to what it was similar to.

Here's a close-up of the grading tools you can use to annotate the work (give the student notes, tell them what they did wrong, what they need to do next time, etc. ). Different tools can be used to add text, highlight sections of student text, strikeouts sections of student text, etc.



## What The Tools Do

**Point Annotation:**

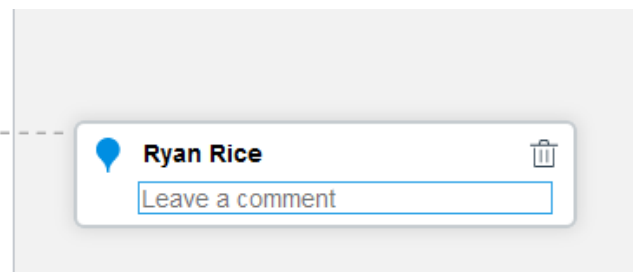


Use this tool to make a comment in a specific point on the document. If you select it and then click on part of their work, you'll get something that looks like this. Put your comment in the "Leave a comment" box.

Trial 1 Beaker A Filter 2

mass of paper + precipitate – mass of paper = mass of precipitate

5.220g – 1.211g = 4.009 g CaCO<sub>3</sub>



**Highlight Annotation:**



Use this to highlight parts of your students' text (like this). Options for different highlight colors appear in the top-left part of the screen when you select this tool.

**Freetext Annotation:**



For putting text boxes you can write in anywhere in your student's document. If, for example, you wanted to add some text after the phrase "mass of precipitate," you could put a text box right after that phrase like so:

mass of paper = mass of precipitate



The trashcan above the text box is for deleting it.

**Strikethrough:**



Lets you strike out part of a student's text (like this). Striking out text automatically gives you the option to add a comment to say why you struck it out.

**Freedraw:**



Use this one to draw lines or circles or moustaches or whatever you need to. Like the Strikethrough tool, you are automatically given the option to add a comment to anything to draw.

**Area annotation:**



This tool is similar to the Point Annotation tool, but lets you draw a box around the area the annotation comment is associated with. You could, for example, use it to draw a box around a whole paragraph to tell the student your comments apply to that paragraph, rather than just one part of it.

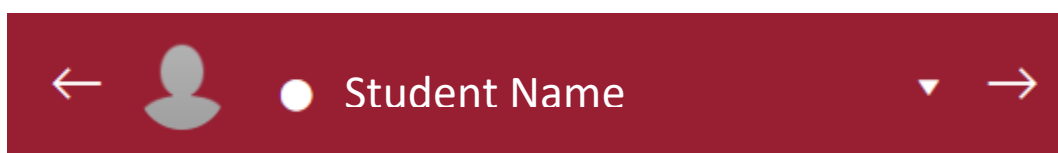
When you're done marking up the work, put the student's grade in the grade box—their whole grade for the whole experiment, including what they received for the pre-lab, data, and post-lab—add any additional comments you need to, and click the Submit button on the right side of the screen. If you want to download an annotated copy of the work you marked up, use the "Download annotated PDF" button at the top-left of the screen.

Download annotated PDF button



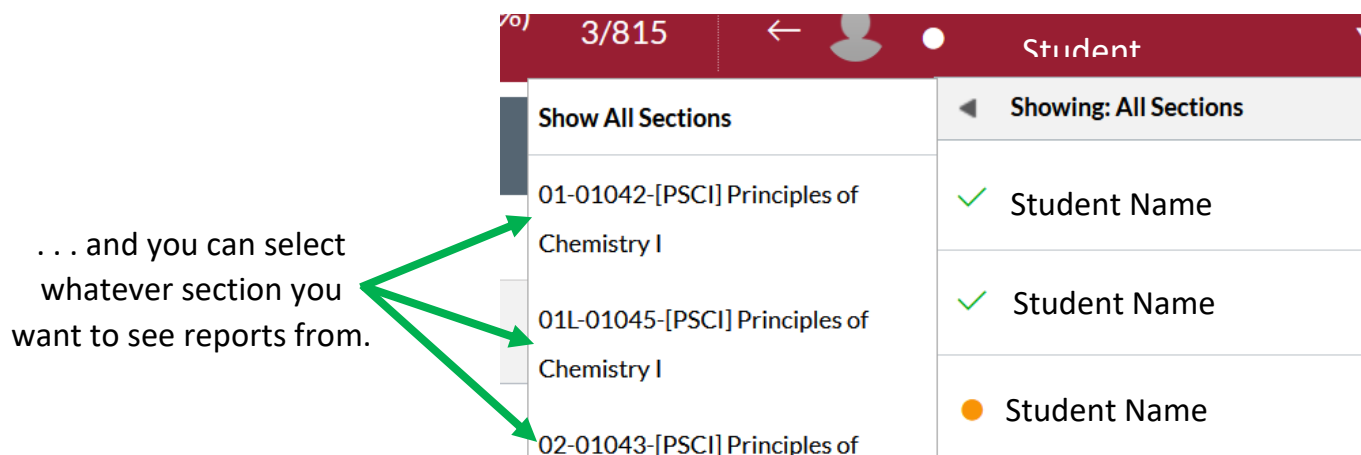
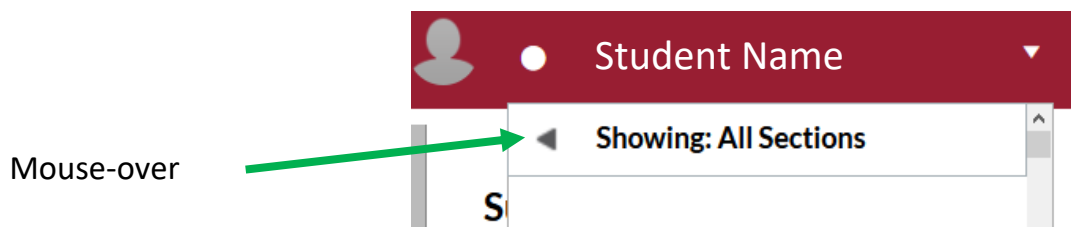
### *Now I want to view another student's work*

To view another student's work, use the front and back arrows at the top-right corner of the screen:



### *I only want to see one section at a time in SpeedGrader*



If you want to filter the reports you can view by section, first click on the triangle next to the right arrow in the upper-right part of the screen. You'll get a pull-down menu. Once you have it, mouse-over the part that says "Showing: All Sections" and you'll get options to view a particular section.












## Grading in Canvas: Method Two

You can also access your students work via the gradebook. Go there and click on the name of a student whose work you want to grade. You'll be taken to a new page that looks like this:

Arrange By

Due Date  

Name	Due	Status	Score	Out of	
ALEKS: Review & Chapter 1.1-1.4	Aug 26 by 11:59pm		5	5	
Intro to Excel Lab Report	Aug 27 by 5pm		15	25	 
ALEKS: Chapter 1.5-1.6	Aug 29 by 11:59pm		5	5	
ALEKS: Chapter 2.1-2.5	Sep 2 by 11:59pm		4.5	5	
Lab Safety Video Quiz	Sep 3 by 8:59am	<span style="border: 1px solid red; border-radius: 5px; padding: 2px;">MISSING</span>	0	5.5	
ALEKS: Chapter 2.6-2.8	Sep 9 by 11:59pm			5	
Lab Measurements Lab Report	Sep 10 by 5pm		22.3	25	 

Individual submissions for each assignment appear on the left side of the page. For submissions involving a pdf (like a lab report), clicking on one of these will take you to another page like this. Again, you can view the Unicheck similarity report by clicking on the colored flag.

To view and annotate the student's work from this page, click on the "View Feedback" link on the right side of the screen, which is to the right of the plagiarism check flag. You will see a preview of the student's work, and the markup tools (same ones as before) will appear above it. When you're done annotating the work, put the student's grade in the grade box add any additional comments you need to, and click the Save button on the right side of the screen

The screenshot shows a PDF viewer window titled "Preview of Chem lab report 2 Student Name.pdf". The viewer includes a toolbar with navigation and annotation tools. The main content area displays the text "Student Name" and "Limiting reactant chem report". A small green flag with "9.64%" is visible near the bottom right of the document. Below the document, there is a file information bar showing "Chem lab report 2 i filename pdf 106 KB". On the right side, there is a "View Feedback" link and a comment box with the text "Add a Comment:", a text input field, and buttons for "Media Comment", "Attach File", and "Save".

# Important Places You'll Need to Know About

## Undergraduate Chemistry Office: Fulmer 319A

The person who occupies this office, Nikki Clark, administers various things like the rooms you hold recitation in and where the exams are held. Students can also go to this office if they need to buy a pair of goggles or if they need to borrow a pair of pants. You can also drop by here to get white board markers and pens if you need them.

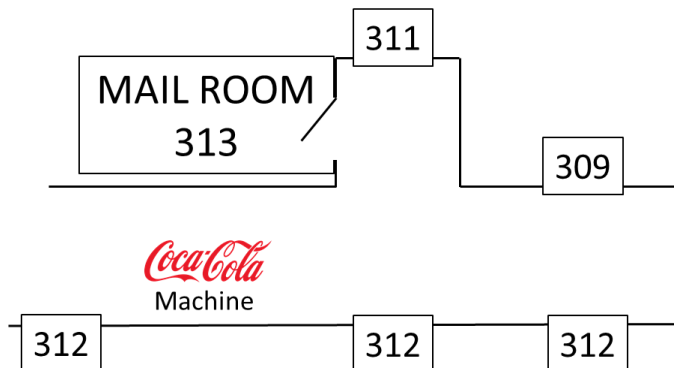
## Graduate Student Lounge: Fulmer 318

Across the hall from the undergrad office is the graduate student lounge, 318. A nice place to relax, grade student work, catch up on your own course work, and have lunch. There's even a ping-pong table.



## TA Mail Room, Fulmer 313

The room where we'll give you your TA mail (grading keys, worksheets, etc.) is in 313, which is on a tiny hallway off the main hallway on the third floor

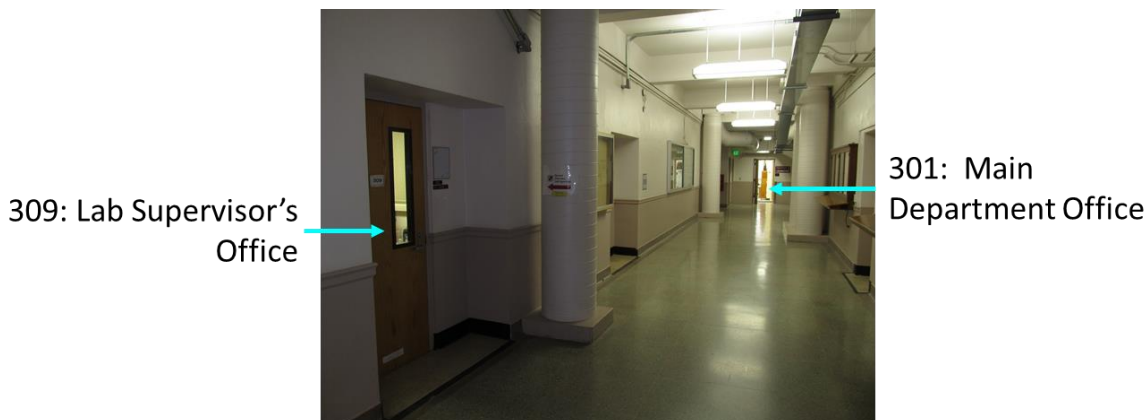


## Laboratory Supervisor Office: Fulmer 309

Your laboratory supervisor, Ryan Rice, lives in Fulmer Hall 309. You can come see him anytime if you have questions about the lab you're doing. If you're already in lab and you have a question or something goes wrong, send a student to fetch him; don't leave your lab room unattended.

## Main Office, Department of Chemistry: Fulmer 301

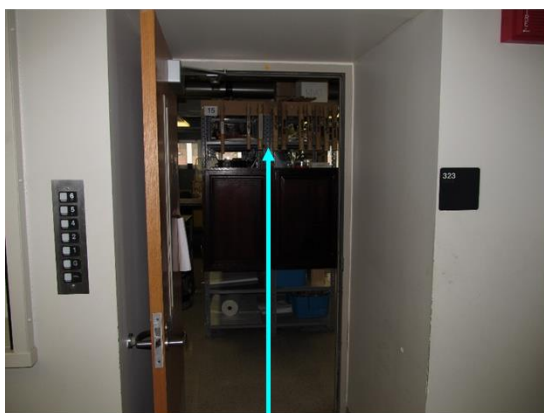
If you need to talk to the Graduate Academic Coordinator (Stacie Olsen-Wilkes), get keys for your *research* lab room (Trent Amonett), report a problem with the building (also Trent Amonett) talk to someone about your paycheck (Jennica Stiff), or purchase things for your research lab (Molly Spain), this is the place to go.



## Third Floor Stockroom: Fulmer 323

This is where all the reagents are prepped and distributed for a lab. You will come here to get the key to open your lab room (we don't issue these keys to you) and return the key when you're done with lab. If you need something from here during lab (supplies, reagents), send a student to the window to get them; don't do it yourself (you need to be in lab watching your students).

323: Undergrad Lab Stockroom



The keys you'll need to get into your lab room are here above this cabinet (we don't issue them long-term)

Send your students to this window (to the right of the door) if you need supplies for your lab room



Your students will also come here to replace glassware if they break it, to replenish reagents, and to dispose of waste.

## Recitation Rooms

For the Fall 2019 Semester, these will be held right in your lab room.

## Lab Rooms

All of our undergraduate chemistry lab rooms are on the second and third floors of Fulmer Hall. Again, the schedule sheet will tell you where yours are.

## Office Hour Room: Troy 305

Troy 305 (the building adjacent to Fulmer Hall on College Ave) is the office hour room for the 100-level courses (101, 105, etc.).

## Main Storeroom: Fulmer 23

This room is in the basement of Fulmer. If you're a Chemistry graduate student, you'll go here for reagents and supplies for your research lab (not your TA labs). If you need goggles for your TA lab, you can come here to get them.



# The Rules, Details, and What-Not of the TA Position

## Recitation/Tutorial

Recitation sessions (the one-hour period before your lab time) are mandatory for all of your students; they must attend regardless of whether they want to. They also must show up on time (with a 5-10 minute grade period), and if they don't, they can't do lab that day.

Recitations are never cancelled, even in weeks where there is no lab. You may not end them early. If students do not have any questions and all course material has been covered, spend the remaining time helping them though problems you've prepared ahead of time, or discuss the concepts and purpose of the lab they are performing that day.

The following lists may help you remember all the administrative tasks that have to be done in recitation.

### **Before Recitation**

Check your mailbox and e-mail for announcements and handouts. Occasionally, you may be given last-minute instructions via one of these.

Check the course webpage to see if your students have completed the pre-lab assignment. Students who have not completed the pre-lab must sit through your entire recitation session and wait until it's over before they can complete their pre-lab and attend lab.

### **During Recitation**

Answer your students' questions. Some instructors will have a worksheet for them to do.

## Recitation—Special Instructions for First Two Weeks

There are a number of special administrative tasks that have to be completed the first two weeks of the semester in recitation.

### **Week 1:**

1. Introduce yourself and write on the board what course and section number you are teaching.
2. Take attendance. If a student is absent, write an "A" next to their name on the attendance sheet.
3. Ask if there's anyone whose name you didn't call. There will be two kinds of people in this category: (1) people who are signed up for the course, but in a different section, and (2) people who are not enrolled in any section.
  - a. If you have someone who is enrolled in the course but in a different section, tell them *they must attend the section they're signed up for*<sup>2</sup>; their schedule will tell them which one this is, or they can check with Nikki in 319A. If these persons want to enroll in your section, they will be able to do so by posting a request on the course Facebook page. If they miss their assigned sections in both weeks one and two, we will have to un-enroll them from the course, and it will be *very hard* for them to get back in.

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<sup>2</sup> This is very important so I put it in italics

- b. If you have someone(s) not enrolled in any section, give them a pink enrollment form. Collect these forms and take them to Nikki at the end of your recitation session.
4. Announce: "If you are retaking this course and would like to be excused from lab please see Nikki in Fulmer 319A this week."
  - Nikki will process excused from lab requests as soon as possible, though the list of students excused may not be finalized until the third week.
  - If a student has been excused from lab, a notation will appear on the section roster.
5. Return the attendance sheet and forms to Nikki after recitation. If you have a night lab you can put these in her mailbox in 313.
6. Some students might try to bring Access Center forms to you; *do not collect these*. Tell the student to take them to the course instructor.

After you have completed these administrative items, go over the following course policies (some of these are explained in this handbook, others in the course syllabus):

- Pre-labs and post-lab policies and when these are due.
  - Point out which pre-lab assignment will be due the following week in the lab manual.
- Missed lab policy. Most courses allow the students to drop a certain number of labs without penalty. See the course syllabus for more information.
- Dress code. Check the syllabus to find out when the first "wet" lab will be performed; your students will need to adhere to the dress code starting this week. Chemistry 106 and 102 will generally perform the first wet lab of the semester in the first and second weeks respectively. Chemistry 101 and 105 will typically perform their first wet lab the third week.
- Quiz policies and rules, for those courses that use recitation time to take the weekly quiz.

## **Week 2:**

1. Take attendance. Again, if a student is absent write an "A" next to their name on the attendance sheet. Return this sheet to Nikki when you are done.

Chemistries 101 and 105 will generally have no lab the first week of the semester and a worksheet "lab" the second week. Chemistries 102 and 106 will have a lab the first week, though in 102 the lab will be a worksheet.

# Laboratory

One of the goals of the WSU General Chemistry courses is to teach the students basic laboratory techniques and develop related skills. It is the responsibility of the TAs to accomplish this goal. You are also responsible for their safety during lab.

## Lab Safety

### Lab Safety Contracts

Before the first wet lab of the course, you will go over the Chemistry Department lab safety contract with your students. The students will sign a copy of it and give the signed copy back to you. Make sure you have a signed copy from every one of your students. After lab, place the signed forms in the lab supervisor's mailbox.

### Lab Supervision

Teaching labs cannot be unsupervised. If you have to leave the lab for any reason, contact the supervisor or another TA to step in and supervise. This will ensure an authority figure will be present to immediately tend to any accidents should one occur. You can contact the supervisor by phone or by volunteering a student to summon them. If something is needed from the stock room, send a student to take care of it; don't go yourself.

### Dress Code

Students must adhere to the dress code while in lab. This includes:

1. Wearing approved slash-proof goggles. Safety glasses are not a substitute for these. If a student has a problem with these fogging, anti-fog is available at the stockroom window.
2. All courses requires a lab coat. Pants must completely cover legs and shoes must completely cover the foot.

If your students need goggles they can purchase them from the bookstore or from someone in room 318 or 319 the first few weeks of the semester; they can buy them from Nikki from about the 4<sup>th</sup> week on. Lab coats, pants, and shoes are available for loan but goggles are not.

The dress code applies to TAs as well as the students. You can get your own lab coat and goggles in the main (basement) stockroom. You don't have to buy these yourself; as an essential workplace safety item, we supply them for you.

### Accidents

Should an accident occur, deal with the situation appropriately. Contact the laboratory supervisor immediately when medical attention or first aid is required or if a student becomes ill. If you are unsure of how to handle a situation, get the laboratory supervisor.

If any student sustains an injury, no matter how slight, an accident report will need to be filled out. The supervisor will take care of this part for you.

If the student is in a life-threatening situation, call 911 and ensure an ambulance is on its way, then contact the supervisor.

If the fire alarm sounds, evacuate your class through the nearest exit and have them proceed to the evacuation points. The figure below indicates where to gather after evacuation.

All the teaching labs are equipped with neutralizing agents for both acids and bases. If a student spills an acidic or basic substance or solution, neutralize the spill and then clean it up. If a student spills either type of chemical on themselves, the affected area must be thoroughly flushed with water for several minutes.

## **Running the Labs**

You cannot make adjustments to laboratory rules or experiments without consulting with the course instructor or laboratory supervisor. This includes, but is not limited to: allowing students to work in partners, excusing the need to follow the dress code or wearing proper goggles, or extending the laboratory time period.

### **Lab Manual and Student Notebooks**

All of your students' experiments are described in separate documents on the course webpage.

Everything your students record must be written directly into their notebooks and not on ordinary notebook paper, scratch paper, hands, sleeves, etc. and transferred to it. It must have duplicating (carbon-copy) pages. Each student needs to have their own notebook; they cannot tear pages out of their neighbor's notebook and use those.

The purpose of using a notebook is to ensure that the student has a permanent bound copy of all data collected. Thus, a student may not "borrow" pages from another student's notebook. Such loose notebook pages are invalid. It is not about using notebook paper. It is about having a complete and intact notebook.

### **At the Start of Lab**

- Check that your students are dressed properly. A few specific items to look for include:
  - Shoes completely cover the foot
  - Pants cover the entire leg, including ankles
  - Their lab coat should cover the rest of them.
- Check that all students have appropriate goggles. If they already own goggles but forgot to bring them, send them home to retrieve them or to the office to purchase a new pair.
- Turn-on bench top fume hoods if they are needed. In rooms 310 and 312 these are activated by buttons near the main fume hoods. In 307 they are on all the time. In all other rooms, they are activated by a timer switch.
- Un-lock both doors to the lab (except fire escape doors).
- Check that all backpacks and personal items are stored away from the benches and out of the aisles.
  - These must be put out of the way; they're a potential tripping hazard.

Make a note of any issues or concerns with the state of your lab room, such as dirty glassware at student stations, a dirty fumehood, or reagents not replenished.

### **During Lab**

- At least once an hour, scan the room for:
  - Students not wearing goggles. Students frequently try to remove them during lab. Some students may also try to remove them after they have finished working but before they are ready to leave the lab. Don't let them.
  - Water bottles—or any food or drink—on bench tops

- Periodically look in the fume hood and check that:
  - The waste containers do not overflow. Liquid waste containers are full when the contents are about 7 cm (a little less than 3 inches) from the top. They will usually have markings to indicate where they can be filled to.
  - All the reagent bottles have their lids screwed on. Students frequently leave these off
- When a student has completed their work and is ready to leave, you will need to sign the last notebook page they recorded data on. Sign books at the student's station so you can check it for the following:
  - All glassware is present, clean, and ready for the next section. Check test tubes to ensure there is no reagent in them. Point penalties may be given to students who leave their stations dirty.
  - Hotplates are unplugged
  - Gas taps are completely off
  - No solid waste or litmus paper in the sink

If a student breaks their glassware or if they have missing glassware, send them to the stockroom to replace it. Students can also be sent to the stockroom to empty waste, replenish reagents, and get other equipment/supplies.

### **Before leaving lab**

Check the fume hood and make sure the following have been done. It will save you time (and effort) if you have a student do these before they all leave:

- Reagents restocked if low (low generally means less than 25% full)
- Waste emptied (take to stockroom to empty it)
- Caps/lids on all bottles (reagents and waste)
- Hood swept up if anything was spilled

Also check the following items in the rest of the room:

- No glass is in the trash cans. Students will sometimes place Pasteur pipettes in the trash, though these must go in the glass waste containers even if they are not broken.
- Weighing area and balances are clean. Points penalties may be assigned to your students if these areas are left dirty.
- Doors are closed and locked

### **Stopping and Starting Times**

Chemistry 101 and 105 sections are allotted approximately three hours for lab. Chemistry 102 and 106 sections are allotted approximately two hours. Unless you are instructed otherwise, you must start and stop your section at its designated beginning and ending times to ensure your section gets its proper time allotment and no more or less.

At the designated stop time for a lab section, the lab room must be ready for the next section to enter. Since some experiments will require the full 2 or 3 hours to complete, you will have to plan ahead so all the "Before Leaving Lab" things are completed on time.

About ten to fifteen minutes before the lab's ending time, announce to all your students that it is time to stop and start cleaning glassware regardless of whether or not they are finished. Student(s) unable to finish will probably not have enough data to fully complete their lab report; these students will have to complete as much of it as they can with the data they have.

### **Lab Waste:**

Certain labs generate waste that cannot be disposed of in the trash or flushed down the sink. Containers for liquid and solid waste will be in the fume hood as needed. *The lids of these containers must be on whenever waste is not being poured into them.*

## **Grades and Grading**

### **Lab Reports**

The majority of a student's lab grade comes from their lab reports. Of all the activities your students perform for points, the reports are the only one you have to grade yourself.

Student lab reports consist of three main sections: the pre-lab, data, and post-lab.

The pre-lab assignments are a set of questions that are intended to start the students thinking about an experiment before they come to lab. They may be administered online, or as a quiz you give in tutorial.

The data section is where the students record their observations and measurements from their experiments. Your students will turn in the original copies of their data pages before they leave lab. Since they will rely on the copies to complete their write-ups, they should ensure the copies are legible.

The post-lab portion, like the pre-lab, is submitted and graded online. They have to submit these to the course webpage; they can't email it to you or give you a paper copy.

### **Quizzes**

Weekly quizzes will be given in some courses. Someone other than yourself will grade the quizzes, but you will have to record the scores in your gradebook and the course web page. Students are allowed a 3x5 card containing their hand written notes for quizzes only (not for exams).

### **Grading**

You will be provided with grading keys that will tell you how many points each portion of the lab reports is worth and what constitutes a correct answer. Adhering to these keys will help ensure consistency between TAs, so they need to be followed. If you find a mistake in one, let the course instructor or supervisor know. When you take off points, indicate why on the student work. This will provide the students with feedback on how to improve future assignments and will help you justify your grading should the student disagree with their score.

You will record all student grades in a provided, hand-written paper gradebook and on the course webpage. These need to be kept up to date and have to be carefully checked for mistakes at the end of the semester. List your students in alphabetical order by last name in your paper gradebook. The paper gradebook is to be presented to the course instructor at the end of the semester. A print-out of an electronic gradebook will not be accepted.

Grading needs to be done in a timely fashion; generally, student work should be in your possession no longer than a week. It is unfair to your students not to keep up with grading—they need the feedback.

You are to grade and record all complete lab reports that have been submitted to you, including those from students who have dropped the course. If a student has been removed from the on-line gradebook, you must still record their scores in your paper gradebook. We may need this information later on if the student retakes the course.

You should not grade lab reports for which one or more sections (pre-lab, data and observations, post-lab) is missing; just give them a score of zero and move on. Do not waste time grading such lab reports.

### **If you fall behind in grading**

Halfway through the semester and near the semester's end, the course instructor will give you a grade entry deadline for mid-term and final grades respectively. If you have become sufficiently behind in your grading that it will not be possible for you to meet these deadlines, contact the course instructor as soon as possible. Don't try to meet the deadline by averaging scores from previous reports or by any other sort of grade forgery (lest you make a bad situation even worse).

### **Privacy of Work**

Grades cannot be posted or disclosed over unsecured channels, such as a phone or an e-mail account other than a WSU account. Graded material needs to be handed back directly to the student it belongs to; it cannot be handed back in any way that would allow any other student to see it (as by placing it in a stack and passing the stack around). It also cannot be given to a roommate or friend. Do not show student grades or work to another student, yours or otherwise. Do not discuss students in open areas or use names when talking about their performance and grades.

Students must submit their work to a person. They cannot place it in a box or slip it under a door.

### **Cheating**

A few of the more common forms of cheating include, but are not limited to: copying lab reports or parts of lab reports, looking at a neighbor's quiz or exam, and working collectively in lab when they are to work individually. If you suspect a student of cheating when you are grading their report, take the work in question to the course instructor. If you catch a student cheating, ask for another TA's opinion when possible. Do not confront or accuse students of cheating; refer them to the course instructor.

If you see a student whose eyes are wandering to another person's paper during a quiz or exam, do not confront that student in a way that would disturb the other students. Quietly, but firmly tell the student to keep their eyes on their own paper, or move them. If a student has a cheat card, confiscate it immediately. If a student is engaging in any other suspicious behaviour, especially during an exam, get another TA to observe. Take action before the test is over.

## **Office Hours**

General Chemistry teaching assistants are required to hold 1 office hours each week for each section that they teach.

Whenever you hold office hours, you are to help everyone to the best of your ability, not just your students. It is reasonable to ask students from other courses for a few minutes while you review the material in their text book, but do not simply refuse help. If they have a question about the course itself, refer them to the course instructor or another TA.

It is your choice whether you decide to share your e-mail address with students, but do not give them a personal phone number.

## Lectures

You are expected to attend the course lecture for which you are a TA. This is to provide you with a review of the material being covered and keep you up to date with what students are learning. In addition, some courses will administer quizzes, pass out handouts, and conduct demonstrations that may require your assistance. Because it is time consuming for one person to pass out quizzes and handouts to everyone in Fulmer 226 (the "pit"), your attendance is all the more essential.

## Meetings

Weekly meetings for all teaching assistants are held on Mondays, typically at 5 pm. You will be given announcements and course material to cover in recitation that week. Any concerns or course problems will be discussed at that time. Information about the week's laboratory exercise will also be given.

## Exams

All teaching assistants are required to help proctor all exams, including the final. The students take their exam in one of several rooms on campus; you and your section(s) will be assigned to one of these. You will distribute exams, proctor the exam for the entirety of the time period allowed, and collect the exams when your students are done. It is your responsibility to recognize your students and keep record of those that attend. This is our only check that students taking the exam are who they say they are and that a student was present and took the exam. Keep a record of exam attendance in your gradebook.

You will be given a more detailed list of instructions for proctoring exams closer to the time they will be given.

There is no lab during exam week in Chemistry 101 or 105. However, there is still recitation during these weeks. Only recitation sessions scheduled during lab time are cancelled. Students who normally attend recitation during this time may attend any recitation section. Students who have recitation during exam time will turn in their assignments at the exam. Lab continues even during exam week in Chemistry 102 and 106.

## Administrative

### TA Absences

If you plan to be absent, it is **your** responsibility to find a replacement for your TA duties. This includes office hours, recitations, labs, and proctoring exams and quizzes. You must find a substitute that is either currently or was previously a teaching assistant for General Chemistry. Once you have found a replacement, please notify Ryan Rice (335-6358, [rwrice@wsu.edu](mailto:rwrice@wsu.edu)) and the course instructor. Provide the phone number and e-mail address of your substitute.

If you unexpectedly fall ill you must notify Ryan (Fulmer 309) immediately of your absence from your TA responsibilities. You will be expected to return the favor and take the responsibilities of the TA who covered your office hour/lab section/exam at a later time. Also call if you are going to be late.



## Availability and Contact

The General Chemistry staff will need the e-mail address and phone number you most frequently use.

You may contact your students via the course webpage or e-mail. How often you agree to answer is at your discretion, but you must check your course email daily. Do not give your students your personal phone number.

Although TAs must be available to General Chemistry faculty and staff, you are not required to be available for your students outside of your regular office hour, recitation, and lab times. You shouldn't meet students in your office area—this can be disturbing to others in your office and sometimes involves safety concerns.

## Interacting with Students

The General Chemistry department expects you to act professionally with regard to how you conduct yourself around your students. This means treating them with respect and courtesy.

*Any intimate relationship between a General Chemistry teaching assistant and student is forbidden.* If you had a relationship with a student prior to the class, please let Nikki, the lab supervisor and the course instructor know immediately so that the student can be moved to another section. As well, you should not become overly-friendly with any student or accept any kind of gift from them—even a cup of coffee.

Always tutor in a public area on campus. Do not offer individual or private help that you are not willing to provide to all of your students. Remember that you do not want to even give the appearance of favoritism. Fulmer Hall rooms 318 and 401 are open lounges and may be used for help sessions.

If you have any concerns, conflicts or frustrations with a particular student, let the lab supervisor and the course instructor know about the situation, even if it seems minor at the time. If a student is getting overly emotional about your grading, end the conversation and set a time to discuss the grading with the course instructor. Do not use another TA as a third person in any student-TA conflict.

## Advising

TAs are only permitted to inform their students of their current point status in lab, or, if you have a student that has already missed 2 lab write-ups, remind them of the course's failing policy when 3 labs have been missed. Refer them to the course instructor or their college advisor if they ask for advice about course selection, dropping the course, or for a grade projection—you cannot advise students in these areas.

## Counseling and Related Services

Although it is relatively uncommon, a few of your students might exhibit signs of emotional distress during the course of the semester. Such distress typically manifests itself as a change in their mannerisms or routine. Some of these changes include:

- Assignments not being turned in
- Numerous absences
- Reduced participation
- Uncooperative or conflicted interactions
- Behaviors that attract attention (e.g., disruptiveness, fidgetiness, sleeping in class)
- Requesting extensions and being uncomfortable when asked for a reason
- Disregarding class rules
- Excessive emotional content in discussing or writing course material

- Severe communication difficulties
- Mention of suicide or homicide in the content of coursework

If one of your students exhibits one or more of these behaviours but does not appear to be in imminent danger of hurting themselves or others, speak to the course instructor about them. WSU Counseling and Testing Services maintains a staff of counselors and psychologists that can work with the student to help them with any personal difficulties they may be experiencing. Their webpage is <http://counsel.wsu.edu/>. This center admits students during walk-in hours for an initial visit. If a student is in crisis and needs to talk to someone immediately, they can call 509-335-2159.

WSU Counseling Services also maintains a program called the AWARE network that can be used “to share concerns about a student’s emotional or psychological well-being, physical health, or academic performance with colleagues who can help.” Such concerns can be submitted on-line at the following site: <http://aware.wsu.edu/assistance-referral/>.

If you have reason to believe a student poses an immediate threat to themselves or others call 911.

## **Lab Safety Contract**

Copies of this will be provided for your students to sign.

Lab Safety Contract

**This safety contract states the lab-safety rules that are to be followed by everyone in order to ensure the safety of the work place for everyone (TA's, students, faculty and staff). Two copies are provided that are to be completed and signed by each student: one should be returned to your TA, and the other retained by the student for use as a guide. The latter should be present in the lab-notebook at all times.**

### **GENERAL RULES**

1. Pre-lab assignments are to be completed prior to entering the laboratory. Read all experimental procedures in the lab-manual thoroughly before entering the laboratory.
2. Do not attempt lab work if you are on any medication that could interfere with your ability to function safely in the lab.
3. Consumption of any type of food/drink (beverages, chewing gum, tobacco, etc.) or application and/or use of cosmetics (lip balm, gloss etc.) in the laboratory is prohibited.
4. Hands and pens/pencils are to be kept away from face, eyes, and mouth while using chemicals or equipment. Hands are to be washed with soap and water after performing all experiments, especially before going to the restroom or leaving the lab for any reason.
5. Use of cell phones, radios, MP3 players, and/or headphones is not allowed in lab. Store these with your other personal items in designated areas.
6. Students are required to practice disciplined and responsible conduct at all times when present in the laboratory. Playing around in the laboratory, sitting or leaning on the lab benches, and disorderly behavior are not permitted. Be alert and proceed with caution at all times when in the lab.
7. All written and verbal instructions are to be followed carefully. If you do not understand a direction or part of a procedure, ask your TA (or other supervising figure) to clarify it before proceeding.
8. Students must be supervised at all times while in lab.
9. Only experiments that are authorized by the course instructor and supervised by your TA may be performed.
10. Each student may only execute experiments in the work space designated to them, and must personally monitor their experiments while they are in progress. Do not move the equipment/glassware for personal preference.
11. Observe good housekeeping practices. Work areas should be kept clean and tidy at all times. Bring only your lab manual, lab book, and other necessary materials to the work area. All backpacks, coats, and other personal items must be stored away from benches, fume hoods, and all chemicals, and out of aisles. Keep aisles clear.
12. All work surfaces and apparatus are to be cleaned by the student at the end of each experiment. All equipment/glassware must be cleaned, inventoried and returned (clean and in working order) to its proper location when you are done. Broken or missing items must be replaced through the stockroom.

13. Chemicals and equipment are NOT to leave the laboratory unless their removal has been authorized by the supervising authority.
14. All chemical wastes must be properly disposed of. This includes checking the waste container before any chemicals are added to ensure it has an appropriate label. Waste containers are not to be over filled. Notify the supervisor if the container is full.
15. Fume hood sashes are to be closed when not in use. Fume hood sashes are not to be opened beyond the 18" mark when in use. Never stick your head into the fume hood.
16. Sinks are to be used only for water and solutions that are permitted by your TA. Mixing of chemicals in sinks is not allowed. Solid chemicals, metals, matches, filter paper, and all other insoluble materials are to be disposed of in their proper waste containers, not in the sink.

### **PERSONAL PROTECTIVE EQUIPMENT**

1. Approved chemical splash goggles must be worn at all times when in the lab. The goggles must seal around the face and have no open holes, *no exceptions*.
2. Contact lenses *should* be replaced with prescription glasses.
3. Dress properly for lab. Clothing must cover all parts of the body between shoulders and toes. Lab coats are required for some courses and highly recommended for all others.
  - a. NO bare midriffs or ankles
  - b. NO tank tops or low-cut tops
  - c. NO shorts, skirts, or cropped pants
  - d. SHOES must be closed-toed and completely cover the entire foot. NO sandals
4. Long hair, hanging items (jewelry, hoodie strings etc.), and loose or baggy clothes must be secured.
5. Gloves are available for use when needed and must be removed before leaving lab. Do not handle personal items such as pens with the gloves on.

### **HANDLING CHEMICALS**

1. All chemicals in the lab are to be considered dangerous and used with caution. Chemicals are not to be touched or tasted. If needed, chemicals may only be smelled via the "wafting" method and only after this method has been demonstrated to you by your TA.
2. Labels on the reagent/chemical bottles must be checked thoroughly prior to use or transfer. Only the directed amount should be used or transferred. Unused chemicals must not be returned to their original container. All chemicals must be properly disposed of in the appropriate waste container.
3. All reagent bottles and waste containers must be capped when not in use. Reagent bottles must not be removed from their designated dispensing areas.
4. Flammable solvents must not be used anywhere near a flame.
5. Acids must be handled with care and as directed by your TA. Dilute acids by adding acid to water, not water to acid.
6. Acids and other chemicals must be properly secured prior to transport from one part of the lab to another.
7. Your TA (or other supervising figure) must be promptly notified of any spills. Clean-up of small spills should be performed immediately as directed by the supervising authority.

## HANDLING GLASSWARE AND EQUIPMENT

1. Use the dust pan and broom provided to clean up any broken glass; never handle it with your bare hands. Place all broken glass in the container designated for this purpose (it will be labelled either "Glass and Sharps" or "Broken Glass"). Replace all broken glassware with a new piece from the stockroom.
2. Examine glassware before each use. Never use chipped or cracked glassware. Never use dirty glassware.
3. Fill wash bottles ONLY with deionized water and use it only as intended, e.g., rinsing glassware and equipment, or adding water to a container.
4. Unplug hotplates when they are not in use.
5. When removing an electrical plug from its socket, grasp the plug, not the electrical cord. Hands must be completely dry before touching the plug or switch.
6. Report damaged electrical equipment immediately. Look for things such as frayed cords, exposed wires, and loose connections. Do not use damaged electrical equipment.
7. Do not use a piece of equipment until its proper use is demonstrated by your TA.

## ACCIDENTS and INJURIES

1. Report any accident (spill, breakage, etc.) or injury (cut, burn, etc.) to your TA immediately, no matter how trivial the accident or injury may seem.
2. Report fires to your TA immediately.
3. If a chemical splashes in your eye(s) or on your skin, immediately flush with running water from the eyewash station or safety shower for at least 20 minutes. Notify your TA immediately.
4. Know the location of the following safety equipment:
  - a. Fire extinguisher
  - b. Safety shower
  - c. Eye wash
  - d. First aid kit
  - e. Chemical spill kit

## EMERGENCY PROCEDURES

In the event of a fire alarm (a continuous sounding bell) while you are working in the laboratory, immediately turn off any Bunsen burners or hotplates you are using and leave the building by the shortest route as designated by your TA. DO NOT use the elevators. Proceed to the appropriate meeting site with your TA; these sites will be posted in your lab room. You must remain with your TA until you have been dismissed by supervising personnel.

In the event of a serious injury or someone becomes ill, immediately turn off any burners or hotplates and evacuate to the hallway until supervising personnel give you additional instructions. DO NOT leave until you have been dismissed by supervising personnel.

I have read and agree to the safety rules set forth in the chemistry lab safety contract. I realize that I must obey these rules in order to insure my own safety, as well as the safety of others. I am aware that any violations of the contract can result in the removal from the laboratory and loss of credit for the experiment. I also understand that I can be held financially responsible for the laboratory equipment used in this course if I break or destroy an item due to carelessness, neglect, or misuse.

# Fulmer Hall Evacuation Map

