

## *Chemistry 141 Syllabus, Fall 2022*

### **Instructor**

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Office hours are M and T 11:00am-12:00pm and other times by appointment. Email me to set up a time and I will set up a meeting with you.

### **Meeting Time and Location**

Monday-Thursday 12:50-4:00 pm, Guion 208

Chemistry 141 is the lab course for Chemistry 131. All sections of the lab meet for a single three hour and ten minute session.

### **Course Website: CANVAS**

All of the PowerPoints will be posted to Canvas for each lab for you to look at and use as needed. Your grades will also be posted to Canvas so that at any time you can see where you stand in the class.

### **Purpose of the Course**

This course will introduce you to experimental chemistry. Laboratory modules emphasize investigation of the chemistry in everyday life and introduce modern analytical techniques.

### **Required Supplies for the course are as follows:**

- (a) One laboratory research notebook purchased from the bookstore.
- (b) One laboratory manual purchased from the bookstore.
- (c) Safety goggles, box of nitrile gloves and an apron purchased from the bookstore.
- (d) Scientific calculator.

### **Required Attire**

Mask, goggles, gloves, a lab coat or apron, and closed toe shoes must be worn at all times when in the lab. Long hair must be tied back. **You cannot begin the lab unless you are properly attired. Please don't come to lab in illegal clothing and shoes!! You will be sent back to your dorm to change.**

### **Laboratory Safety:**

Wear your goggles over your eyes and not on top of your head, whenever you are in lab! Contact lenses are **NOT** recommended; wear your glasses covered by safety goggles.

Cleanliness: Keep the shared space in the lab clean throughout the lab period. You are expected to police each other. I'd rather not penalize the entire class for the thoughtlessness of one, so

please cop to your own mess or better yet don't leave a mess at all. Do not leave chemicals on the balance or any other apparatus. Make sure to wipe off all equipment that you use that is being shared by the entire class. Make sure to wear your gloves at all times and keep your hands away from your face during lab. Remove your gloves and throw them away anytime you leave the lab. Wash your hands before leaving lab as well.

Safety training will include viewing a video, going over safety rules and reading/signing a safety agreement/standard operating procedure form for the lab. The Safety Data Sheets for all chemicals used in lab are located up front in a binder.

### **Written Work:**

All written work associated with the lab should be entered directly onto the appropriate pages in the lab notebook or on the data sheets in the lab manual and should be written in ink. Nothing should be scratched out or illegible. Write your observations as you go through the lab. Do not take notes to write-up later. Some of the labs require a calculator, so bring it to lab.

### **Pre-lab Responsibilities:**

***Before coming to lab*** complete the following entries in your laboratory notebook:

1. Enter the date and the title of the lab.
2. Introduction to the day's lab, stating its objectives.
3. Enter safety information and chemical structures on chemicals used.
4. Complete the *Prelab*, if one exists for the lab.
5. Read all of the procedure and know what you will be doing in lab

Students who neglect to finish 1-4 above before coming to lab will be *downgraded*. The TA will be checking notebooks at the beginning of each new lab. You will lose points based on the amount of the deficiency. A check loses 5 points and a check minus loses 10 points. A check plus loses no points. Make sure that you have **ALL** of the work completed and in the notebook. That is, **everything** is 1-4 above.

### **Introduction**

This paragraph will be graded for its completeness, clarity and conciseness. State the purpose of the lab and how that purpose will be fulfilled. Write in complete sentences using correct grammar and punctuation.

### **Safety and Chemical Structures**

Here you want to list all of the chemicals that you are using in lab and any specific safety precautions that should be taken with this chemical. You should include any health hazard, flammability, reactivity, specific handling and disposal procedures, and any type of safety equipment needed to use the chemical safely (i.e. gloves, goggles, aprons, under a hood only). However, we will never be ingesting lab chemicals so your health concerns should be more focused on accidental inhalation or contact with the skin. One way you can find this information

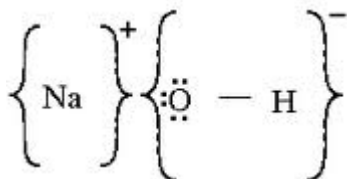
is to use Google and type in SDS-and the name of the chemical you are looking for information on. Include the **chemical structures, formulas and names** of these substances as well. You are responsible for any errors in the information so use a reliable source.

For this section you will need to set up a table as follows and include the information on the chemicals that are listed in the lab under the Safety section.

Chemical Name and Formula	Chemical Structure	Health Code	Flammability Code	Reactivity Code	Specific Health Hazards	Safety Equipment

Let's fill in the above table for sodium hydroxide.

Chemical Name and Formula	Chemical Structure	Health Code	Flammability Code	Reactivity Code	Specific Health Hazards	Safety Equipment
Sodium hydroxide NaOH	↑	3	0	1	Corrosive, targets eyes and skin	Gloves, apron and goggles



### Observations

This section should be filled in as you are doing the lab with any observations of the experiment. Observations could include, but are not limited to, the following:

- Color, change in color.
- Temperature, change in temperature. Can be just an observation that the container got cold or hot.
- Aromas, such as sweet, strong, pungent or any other smell that is unusual. If there is no smell, then it is not worth noting.
- Whether a chemical is a liquid, solid, or gas. This includes products of reactions as well.
- Heat or bubble evolution indicating that a gas was formed.
- Any data that is entered into a chart/data table.

**Write your observations as you make them on the data sheets in the lab manual.**

### Questions

At the end of most sections you will find questions pertaining to the procedure that you just performed. These questions need to be answered on the data sheets.

### Conclusion

You should write a "conclusion" for each lab in the lab notebook. The conclusion section should state what you learned from the lab. This section will be graded for clarity and reason.

Remember:

- Everything should be in blue or black pen! You will lose 10 points if written in pencil.
- Everything should be as concise as possible!
- The first page of each experiment should have your name, date and title of experiment.
- No white-out or erasing allowed. Put one line through the sentence/word and initial the line.

### **Handing in Labs**

The lab reports will be due at the beginning of the next lab period. You will be expected to hand in any parts of the lab that were done the previous week. Not all of a lab may be due in the same week. If the lab is a two week lab, then one week you would hand in the sections done the week before, the next week you would hand in the rest of the lab. You are to place the labs in the tray located in the front of the room. **The order that the labs should be in is: the introduction, safety, and conclusion from the notebook, then data sheets and questions from the manual.** I will pick them up when we have finished the discussion of the lab for the day. If you turn them in after this time, they will be considered late and you will lose points. So, please make a habit of turning them in when you walk into the lab.

### **Attendance:**

Attendance in lab is *required* and students should make every effort to come to lab at their regularly scheduled time. If a lab is missed, you will need to come during that week to make it up. If you play sports and know you will be missing a lab, then come to me **BEFORE** the fact and make arrangements to make-up the lab. You will be responsible for making up the lab **during one of the other scheduled lab classes within one week.** If you are sick, then you will need to let me know. If there are extenuating circumstances, then come to me to work out a make-up time. Do not schedule any other class or activity during your lab time!!!

### **Class Conduct and Academic Integrity**

“Sweet Briar women do not lie, cheat, steal, or violate the rights of others. Therefore, I pledge to uphold all standards of honorable conduct. I will report myself and others for any infractions of this pledge.” - The Honor Code

Students are expected to respect themselves, their peers, and their professors. If any behavior becomes a distraction, the professor may dismiss any student from class and give an absence for that day. Cheating and plagiarism will not be tolerated; these will be reported to the Academic Judicial Chairwoman to be addressed in accordance with the Sweet Briar College Student Handbook. Consequences may also include failure of the assignment or failure of the course.

### **Professor/Student-Athlete Academic Contracts:**

If you are on an athletic or riding team this term, I expect you to provide me with a completed Professor/Student-Athlete Academic Contract to consider and sign ASAP.

### **Expectations and Grading Policy**

Lab reports for each lab will be handed in at the start of lab each week after the lab was completed. You will hand in the copy of the lab report from the lab notebook, that tears out of the notebook easily. Be sure these pages are legible and securely stapled together. Be sure to include the pages from the lab manual that you filled in with your data and answered the question on. Each lab will be worth 100 points. **Late penalty is 5 points per day, including weekends.**

A student's grade for the course will be based upon the lab reports and satisfactory completion of lab checkout at the end of semester. Letter grades may be interpreted as:

A	100 - 93 %
A-	92 - 90 %
B+	89 - 87 %
B	86 - 83 %
B-	82 - 80 %
C+	79 - 77 %
C	76 - 73 %
C-	72 - 70 %
D+	69 - 67 %
D	66 - 63 %
D-	62 - 60 %
F	59 % or lower

### **Accommodations**

Sweet Briar College is committed to upholding and maintaining all aspects of the federal Americans with Disabilities Act of 1990 (ADA), as amended in 2008, and Section 504 of the Rehabilitation Act of 1973. If you are a student with a disability and wish to request reasonable accommodations, please contact the Office of Accessibility Services [accessibility@sbc.edu](mailto:accessibility@sbc.edu) for an appointment. Because many accommodations require early planning, requests for accommodations should be made as soon as possible.

### **Diversity, Equity and Inclusion Statement**

At Sweet Briar, administrators, faculty, and staff are committed to the creation and maintenance of “inclusive learning” spaces. These are classrooms, labs, and other places of learning where you will be treated with respect and dignity and where all individuals are provided equitable opportunity to participate, contribute, and succeed.

In Chemistry 141, all students are welcome regardless of race/ethnicity, gender identities, gender expressions, sexual orientation, socio-economic status, age, disabilities, religion, regional background, veteran status, citizenship status, nationality and other diverse identities that we each bring to class.

### **Wellness**

You may encounter difficulties during the course of this term, as we all do from time to time. At Sweet Briar College, we are committed to supporting and advancing the mental health and well-being of our students. During the course of their academic careers, students often experience personal challenges that contribute to barriers in learning, such as drug/alcohol problems, strained relationships, persistent sadness or loss of interest in enjoyable activities, family conflict, grief and loss, domestic violence, difficulty concentrating, problems with organization, procrastination and/or lack of motivation. Students also sometimes come to college with a history of learning difficulties, experience difficulties succeeding in a particular subject (*e.g.*, math, reading), or have experienced some form of trauma, be it emotional or physical (*e.g.*, head injury).

These mental health concerns can lead to diminished academic performance and can interfere with daily life activities. If you feel that personal circumstances are preventing you from succeeding in this class, you are encouraged to speak with me as early as you can so that we can plan a reasonable path forward. If I am unable to offer you an appropriate level of support, I will do my best to connect you with other resources we have on and off campus. I want you to be safe and supported so that you can get the best educational experience possible.

If you or someone you know has a history of mental health concerns or if you are unsure and would like a consultation, a variety of confidential services are available. If you find yourself experiencing these issues, please consider taking advantage of the resources available. [Horizon Health Services](http://www.horizonbh.com/) (<http://www.horizonbh.com/>) are located on campus in the Health and Wellness center in the basement of the Chapel. Counselors are on campus and available for appointments Monday-Friday from 9 a.m. to 5 p.m. Students may schedule appointments by calling 434-946-2316. You can also email questions to [HorizonBehavioralHealth@sb.edu](mailto:HorizonBehavioralHealth@sb.edu).

**Chemistry 141, General Chemistry Laboratory I  
Schedule, Fall 2022**

**Note: This syllabus is subject to change!**

**Week 1** Safety discussion; Safety video; Syllabus, Check-in of desks  
M 9/19-Th 9/22

**Week 2** Lab #1: *Reactions to Avoid! How Reagents React with Everyday Materials*  
M 9/26-Th 9/29

**Week 3** Lab #2: *What Color is Your T-Shirt? Reflections on an Absorbing Question Parts A-D*  
M 10/3-Th 10/6

**Week 4** Lab #2: *Continuation of What Color is Your T-Shirt? Reflections on an Absorbing  
M 10/10-Th 10/13 Question ; Parts E-G*

**Week 5** No lab this week  
M 10/17-Th 10/20

**Week 6** Lab #3: *Lewis Structures and Molecular Geometry.*  
T 10/24-Th 10/27

**Week 7** Lab #4: *What is a Chemical Reaction? A Look at Some Typical Examples*  
M 10/31-Th 11/3

**Week 8** Lab #5: *Culinary Chemistry*  
M 11/7-Th 11/10

**Week 9** Lab #6: *The Determination of Heats of Reactions and the Verification of Hess' Law*  
M 11/14-Th 11/17

**Week 10** Thanksgiving Break November 18-27, 2022

**Week 11** Lab #7: *Production of a Gas From a Salt*  
M 11/28-Th 12/1 **This lab is due at the end of the lab!!!**

**Week 12** *Checkout. Required! A grade of 0 will be given for those who fail to check out!*  
M 12/5-Th 12/8 **Note: classes end Wednesday, December 14, 2022.**