

Biochemistry Lab, Spring 2021

BCHM 309

CRNs: 11816, 11819, 11820, 43400, 67106

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What Students Say

- “Her labs were rigorous, and she pushed the students to do their very best.... Even though I wasn't enthusiastic about designing our own experiment at the time, I'm glad now that I did -- it forced me to look at the material differently, and my understanding of the material was much better... This lab was definitely a challenging course, but I'm proud of the grade I got!”
- “I did like having the lecture videos to watch before lab. It made our time in lab less stressful by having some knowledge prior to the lab.”
- “Dr. Hart has been one of my favorite professors. She was very helpful throughout the semester and truly emphasized that we had the ability to learn the material... I liked how the course was set up... I haven't learned this much in a lab since I've been in college. It was phenomenal. She and [the TA] were always available for questions, which made me understand the material even more.”

Course Resources*



Dr. Hart: ohart@purdue.edu
Locations: BCHM 107

<https://purdue.webex.com/meet/ohart>
<https://purdue-edu.zoom.us/j/3462451808>



brightspace
by D2L



Google Drive

***No textbook required!**

Your Teaching Assistants

Deb Saha 	<p>Email: saha32@purdue.edu</p> <p>Lab Sections: Tuesday 8:30am, Thursday 11:30am Help Session: Online. Time TBA</p>
Colin Hemme	<p>Email: hodas@purdue.edu</p> <p>Lab Sections: Tuesday 11:30am Help Session: Online. Time TBA</p>
Meghna Saldanha	<p>Email: msaldanh@purdue.edu</p> <p>Lab Sections: Tuesday 2:30pm, Thursday 2:30pm Help Session: Online. Time TBA</p>
Tara Kazemi 	<p>Email: tkazemi@purdue.edu</p> <p>Lab Sections: Tuesday 2:30pm, Thursday 2:30pm Help Session: Online. Time TBA</p>

Course Description

Students who enroll in BCHM 30900 have wide-ranging interests and aspire to pursue careers in biological science, medicine, veterinary medicine, animal sciences, dietetics, food science, botany and nutrition. This course will provide students with the basic foundation of biochemistry concepts, experimental design and scientific communication that will be required for the pursuit of their academic and career objectives.

Learning Outcomes

When you complete this course, you will be able to:

- Discuss how the structure of biomolecules, such as proteins, nucleic acids, lipids and carbohydrates, determines their overall biological function in addition to their behavior in experimental settings.
- Demonstrate proficiency in the following lab skills:
 - Liquid handling and dilutions
 - Protein purification and determination assays
 - Column chromatography
 - Spectrophotometric assays
 - Enzyme activity assays
 - Lab calculations and data handling
- Understand and apply scientific methods of experimental design and analysis.
- Apply quantitative reasoning in data analysis and reporting.
- Communicate scientific ideas clearly, both orally and in writing.
- Collaborate with peers from diverse programmatic and cultural backgrounds to enhance your and their learning experience.

Learning Resources, Technology & Texts

Required Texts

There is no required textbook for this course. All course material will be accessible via Brightspace.

Optional Additional Readings and/or Resources

YouTube, the Khan Academy, and your old Organic Chemistry notes will be useful to remind you of prerequisite knowledge, get you up to speed, or reiterate some of the concepts we discuss. Your TAs will also be available to help you during help sessions.

Software/Web Resources

- You will need access to a computer to take this course. Prelab lectures will be delivered via Brightspace, and you will need to complete quizzes online, and upload all assignments and exams.
- It is recommended, though not required, that you bring a laptop with you to lab.
- Some assignments may be handwritten if indicated, but in such cases, you will need to be able to scan the documents, and upload as PDFs, MS Word, or MS Excel files. Remember that [MS Office is free for all students!](#)
- You will need to be able to work on shared online files via Google Docs or similar with your lab team.
- In the unlikely (ahem

OBTAINING EXTRA HELP

Your TA will be available to answer your questions in lab, and during office hours/help sessions. Attendance at help sessions hosted by any of the TAs is strongly encouraged. Alternatively, you can submit questions on the discussion board, or by e-mail. If your schedule conflicts with the Help session times, contact Dr. Hart.

Attending Help Sessions has been associated with a grade improvement of approximately one letter (~10%)!

Brightspace

Access the course via Purdue's Brightspace learning management system. Begin with the Start Here tab, which describes how the course Brightspace is organized. It is strongly suggested that you explore and become familiar not only with the site navigation but with content and resources available for this course. See the Student Services widget on the campus homepage for resources such as Technology Help, Academic Help, Campus Resources, and Protect Purdue.

Assessment & Grades

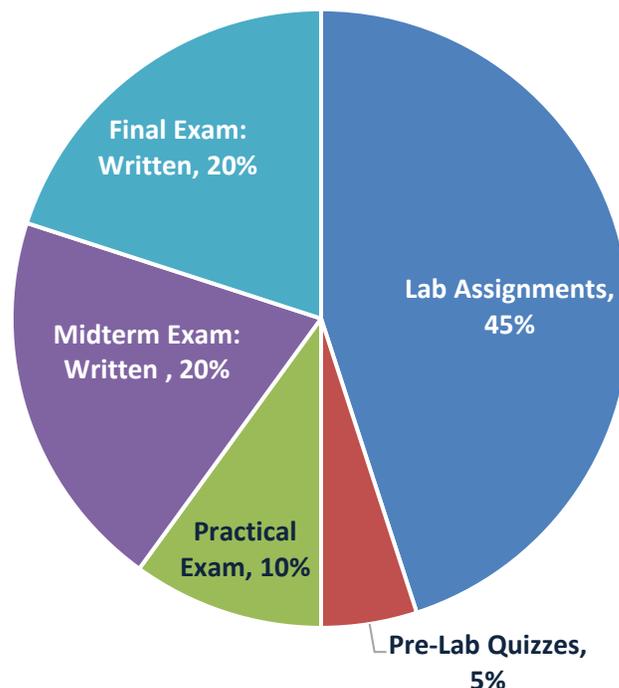
Lab Assignments

At the end of most labs you will have a written lab assignment which will be due at the beginning of the following lab period. See the weekly details on Brightspace for specific details. Lab reports should be submitted on Brightspace before the beginning of the lab session in which they are due.

Some assignments will be individual assignments (Labs 2 & 3), and some will be team assignments, where only one member of the team was present in lab, but all members of the team are responsible for the lab assignment.

Pre-Lab Quizzes

Pre-lab quizzes will be available after you have completed watching the online pre-lab videos. Even if you will not be attending in-person lab a particular week, you should still make sure you have completed all the pre-lab requirements on time! There will be a quiz before every lab, unless specifically indicated by Dr. Hart, to reward you for preparing for class. It will cover only very basic material from the lecture material slides, and/or material which is considered pre-requisite for BCHM 309. Each quiz will be worth 5-10 points.



While there is no official extra credit in the course, Dr Hart encourages you to use the **BrightSpace discussion board to ask content-related questions, and answer questions your peers have asked. Your **meaningful participation** may be eligible to give you up to **15 points extra credit** at the end of the semester (useful for those on a grade bubble!).*

What will your Final Grade be?

Points	Percentage	Grade
900-1000	90.0-100%	A
800-899	80.0-89.9%	B
700-799	70.0-79.9%	C
600-699	60.0-69.9%	D
0-599	0-59%	F

Lab Examinations

There will be two written exams in this course; a mid-term exam and a final exam at the end of the semester. Both will be conducted remotely. The in-person practical exam will cover how to properly use some basic lab equipment, calculations, and techniques that you have learned during the semester. **The final exam will cover material from the entire course.**

Testing Accommodations

Where possible, Dr. Hart will work with you to fulfil your testing accommodations. Contact her as soon as you can (don't forget so submit your paperwork through MyPurdue!) to discuss your needs, and what accommodations are appropriate and possible for the course.

Make-ups for Labs and Exams

Unfortunately, because of the schedule and sequence of labs, and the number of students in the class, makeup labs and exams are not possible.

If you are representing Purdue in some capacity, contact Dr. Hart to discuss what you need to do. While every case will be assessed individually, see the table below for examples of what may or may not be considered an excusable absence:

No-Shows

- If you do not show up to lab (unexcused absence), the maximum grade you can get in the course is a C.
- If you miss two labs, that's an automatic F.
- If you don't submit an exam by its due date, you will get a zero.

To avoid these consequences, please communicate with Dr. Hart and/or your TA in advance of any lab you will miss!

We can probably work something out*	This is not going to be an excused absence
<i>You are ill</i>	<i>You need to take extra days at Thanksgiving or Fall Break to spend time with your family.</i>
<i>You are representing Purdue at the National [insert awesome conference/meeting here]</i>	<i>You booked your flights for [someplace] already.</i>
<i>You are participating in a Varsity or Club competition</i>	<i>You are going on a study abroad.**</i>
<i>You have military duty You have a family emergency</i>	<i>You have an interview for an internship</i>

***Documentation** may required before certain absences will be considered as excused. In addition, except in the case of an emergency, you must discuss your absence with Dr. Hart as soon as possible, and no later than two weeks prior to the requested absence.

BCHM 309 Policies

ATTENDANCE POLICY DURING COVID-19

TL/DR: If you are exhibiting any symptoms of COVID-19, are otherwise ill, or are advised to isolate/quarantine, do not come to campus. If you exhibit symptoms of COVID-19 or have been in contact with someone who has tested positive, it is critical you contact the Protect Purdue Health Care Center (PPHC) and follow their recommendations including testing, quarantining, or isolation.

Students should stay home and contact the Protect Purdue Health Center (496-INFO) if they feel ill, have any symptoms associated with COVID-19, or suspect they have been exposed to the virus. In the current context of COVID-19, in-person attendance will not be a factor in the final grades, but the student still needs to inform the instructor of any conflict that can be anticipated and will affect the submission of an assignment or the ability to take an exam. Only the instructor can excuse a student from a course requirement or responsibility. When conflicts can be anticipated, such as for many University-sponsored activities and religious observations, the student should inform the instructor of the situation as far in advance as possible. For unanticipated or emergency conflict, when advance notification to an instructor is not possible, the student should contact the instructor as soon as possible by email, through Brightspace, or by phone. When the student is unable to make direct contact with the instructor and is unable to leave word with the instructor's department because of circumstances beyond the student's control, and in cases of bereavement, quarantine, or isolation, the student or the student's representative should contact the Office of the Dean of Students via email or phone at 765-494-1747.

Our course Brightspace includes a link on Attendance and Grief Absence policies under the University Policies menu.

ACADEMIC GUIDANCE IN THE EVENT A STUDENT IS QUARANTINED/ISOLATED

If you become quarantined or isolated at any point in time during the semester, in addition to support from the Protect Purdue Health Center, you will also have access to an Academic Case Manager who can provide you academic support during this time. Your Academic Case Manager can be reached at acmq@purdue.edu and will provide you with general guidelines/resources around communicating with your instructors, be available for academic support, and offer suggestions for how to be successful when learning remotely. Importantly, if you find yourself too sick to progress in the course, notify your academic case manager and notify me via email or Brightspace. We will make arrangements based on your particular situation. The Office of the Dean of Students (odos@purdue.edu) is also available to support you should this situation occur.

PROTECT PURDUE PLAN

The Protect Purdue Plan, which includes the Protect Purdue Pledge, is campus policy and as such all members of the Purdue community must comply with the required health and safety guidelines. Required behaviors in this class include: staying home and contacting the Protect Purdue Health Center (496-INFO) if you feel ill or know you have been exposed to the virus, wearing a mask in classrooms and campus buildings, at all times (e.g., no eating/drinking in the classroom), disinfecting desk/workspace prior to and after use, maintaining proper social distancing with peers and instructors (including when entering/exiting classrooms), refraining

from moving furniture, avoiding shared use of personal items, maintaining robust hygiene (e.g., handwashing, disposal of tissues) prior to, during and after class, and following all safety directions from the instructor.

Students who are not engaging in these behaviors (e.g., wearing a mask) will be offered the opportunity to comply. If non-compliance continues, possible results include instructors asking the student to leave class and instructors dismissing the whole class. Students who do not comply with the required health behaviors are violating the University Code of Conduct and will be reported to the Dean of Students Office with sanctions ranging from educational requirements to dismissal from the university.

Any student who has substantial reason to believe that another person in a campus room (e.g., classroom) is threatening the safety of others by not complying (e.g., not wearing a mask) may leave the room without consequence. The student is encouraged to report the behavior to and discuss next steps with their instructor. Students also have the option of reporting the behavior to the Office of the Student Rights and Responsibilities. See also Purdue University Bill of Student Rights.

NON-DISCRIMINATION

Purdue University's non-discrimination policy will be upheld in this classroom. Purdue University is committed to maintaining a community which recognizes and values the inherent worth and dignity of every person; fosters tolerance, sensitivity, understanding, and mutual respect among its members; and encourages each individual to strive to reach his or her own potential. In pursuit of its goal of academic excellence, the University seeks to develop and nurture diversity. The University believes that diversity among its many members

strengthens the institution, stimulates creativity, promotes the exchange of ideas, and enriches campus life.

Purdue University views, evaluates, and treats all persons in any University related activity or circumstance in which they may be involved, solely as individuals on the basis of their own personal abilities, qualifications, and other relevant characteristics.

CELL PHONES

For lab safety reasons, do not use your cell phones in lab.

LAB SAFETY & PPE

Please review the Lab safety section of this syllabus. Failure to adhere to lab safety rules will endanger you, your classmates, and anyone else who uses the lab. Violations of lab safety rules will result in a warning for the first occurrence, and a grade penalty for subsequent occurrences.

EMERGENCY PREPAREDNESS

In the event of a major campus emergency, course requirements, deadlines and grading percentages are subject to changes that may be necessitated by a revised semester calendar or other circumstances. To get information about changes in this course consult the class Brightspace site or e-mail or phone the instructor.

Dr. Hart will go through emergency preparedness with you on day one of class, and more information can be found in the Lab safety section of this syllabus and in the First Class materials. If an emergency occurs while class is in session, you are advised to follow the guidelines of your instructor and TAs.

COURSE EVALUATIONS

During the last week of the semester, you will be provided an opportunity to evaluate this course and instructor(s) and TA. To this end, Purdue has transitioned to online course evaluations.

- Towards the end of the semester, you will receive an official email from evaluation administrators with a link to the online evaluation site. You will have a finite amount of time to complete this evaluation. Your participation in this evaluation is an integral part of this course. Your feedback is vital to improving education at Purdue University. I

strongly urge you to participate in the evaluation system.

- You will also receive a request from the Department of Biochemistry to evaluate your TA. TAs depend on feedback from students to improve their teaching, and these evaluations contribute to teaching improvements, as well as recognizing TAs for excellence in their positions.

What other resources might be useful?

- **CAPS Information:** Purdue University is committed to advancing the mental health and well-being of its students. If you or someone you know is feeling overwhelmed, depressed, and/or in need of support, services are available. For help, such individuals should contact Counseling and Psychological Services (CAPS) at (765)494-6995 and <http://www.purdue.edu/caps> during and after hours, on weekends and holidays, or through its counselors physically located in the Purdue University Student Health Center (PUSH) during business hours.
- The **Disability Resource Center (DRC)** is a resource for students. You may present a “Letter of Accommodation” to Dr. Hart at any point in the semester (though sooner is always better!). If you have questions about accommodations, please contact the DRC at: 494-1247 or drc@purdue.edu.
- This is a stressful time for all of us. Please reach out to Dr. Hart directly if you have concerns she may be able to help with, or just to notify her of any circumstances that make fulfilling the course requirements overly burdensome for you.

ACADEMIC MISCONDUCT

There will be a Zero-Tolerance policy for lack of personal integrity in this course. At a minimum, cheating will result in zero points for the assignment or exam in question. It's also possible that a student will fail the class as a result. It is always best to avoid the very appearance of cheating.

Information on Purdue's policies with regard to academic misconduct can be found at http://www.purdue.edu/studentregulations/student_conduct/regulations.html

A first incident of academic misconduct will result in a minimum of two actions:

- The incident will be reported to the Office of the Dean of Students. Academic misconduct may result in disciplinary sanctions including expulsion, suspension, probated suspension, disciplinary probation, and/or educational sanctions.
- Zero points will be assigned as the grade for the exam, quiz, or assignment in question.
- If the first incident is considered significant enough (e.g. dishonesty on the final exam), the result may be an automatic F for the course.

A second incident of academic misconduct will result in the above actions, plus the following:

- Dr. Hart will ask that the Office of the Dean of Students support her recommendation that the student be removed from the course.

Punitive grading decisions will be made in consultation with the Office of the Dean of Students. Please note: reported incidences of academic dishonesty go on record for reference by other instructors. Further, a record of academic dishonesty is likely to influence how current/future situations are handled.

So... your House has a Chegg subscription? ... Well, so does Dr. Hart...

Did you know: Depending on so-called "tutoring" services like Chegg, Course Hero, and others, can propagate misinformation about content, and lead to not only failing to learn the material yourself, but learning the material in the wrong way, or with errors.

While online study aids can be very effective, getting an online "tutor" to complete your assignments, using published answers as your own, and/or sharing any material from BCHM 309 with anyone, either online, or in person, at any time during or after your enrollment in the course, is **an infringement of Dr Hart's intellectual property and a copyright violation against Dr Hart and Purdue**. You will be considered to have engaged in malicious academic dishonesty and will be penalized accordingly, even if it **means a grade change after you have completed the course**.

Please ask Dr. Hart or your TAs for directions to online resources that are effective study aids.

To provide you with an unambiguous definition of academic misconduct, the following text has been excerpted from "Academic Integrity: A Guide for Students", written by Stephen Akers, Ph.D., Executive Associate Dean of Students (1995, Revised 1999, 2003), and published by the Office of the Dean of Students in cooperation with Purdue Student Government, Schleman Hall of Student Services, Room 207, 475 Stadium Mall Drive West Lafayette, IN 47907-2050.

"Purdue prohibits "dishonesty in connection with any University activity. Cheating, plagiarism, or knowingly furnishing false information to the University are examples of dishonesty." [Part 5, Section III-B-2-a, Student Regulations] Furthermore, the University Senate has stipulated that "the commitment of acts of cheating, lying, and deceit in any of their diverse forms (such as the use of substitutes for taking examinations, the use of illegal cribs, plagiarism, and copying during examinations) is dishonest and must not be tolerated. Moreover, knowingly to aid and abet, directly or indirectly, other parties in committing dishonest acts is in itself dishonest." [University Senate Document 72-18, December 15, 1972]

What is Plagiarism?

Plagiarism is a special kind of academic dishonesty in which one person steals another person's ideas or words and falsely presents them as the plagiarist's own product. This is most likely to occur in the following ways:

- using the exact language of someone else without the use of quotation marks and without giving proper credit to the author. **PLEASE NOTE: using the exact language of anyone else, even with quotation marks, is NEVER appropriate in most science writing that is required in this class.**
- presenting the sequence of ideas or arranging the material of someone else even though such is expressed in one's own words, without giving appropriate acknowledgment
- submitting a document written by someone else but representing it as one's own

Plagiarism on assignments is automatically detected by the integrity tool on BrightSpace. There will be ZERO tolerance for plagiarism in this course.

How do I know if I am inappropriately using online resources?

- **Sometimes we will tell you to use online resources to help in writing your assignments!** So, how do you know if you are using them appropriately? The bottom line is this: If you are using other resources (either online or physical texts) primarily to get your assignment done more quickly, and/or to circumvent learning/studying, then you are engaged in academic misconduct. If you are using online resources to enhance or aid in your learning, then you are probably doing it correctly!
- Dr. Hart may ask you to explain what you have written on an assignment or an exam to ascertain if you actually understand what you have done. **You must always be able to explain and/or replicate your work.**
- Always clarify with your TA or Dr. Hart if you have questions about how to use an online resource appropriately. We are here to help.

NOTICE OF COPYRIGHT PROTECTION OF COURSE MATERIALS

Among the materials that may be protected by copyright law are the lectures, notes, and other material presented in class or as part of the course. Always assume the materials presented by an instructor are protected by copyright unless the instructor has stated otherwise. Students enrolled in, and authorized visitors to, Purdue University courses are permitted to take notes, which they may use for individual/group study or for other non-commercial purposes reasonably arising from enrollment in the course or the University generally.

Notes taken in class are, however, generally considered to be “derivative works” of the instructor’s presentations and materials, and they are thus subject to the instructor’s copyright in such presentations and materials. No individual is permitted to sell or otherwise barter notes, either to other students or to any commercial concern, for a course without the express written permission of the course instructor. To obtain permission to sell or barter notes, the individual wishing to sell or barter the notes must be registered in the course or must be an approved visitor to the class. Course instructors may choose to grant or not grant such permission at their own discretion, and may require a review of the notes prior to their being sold or bartered. If they do grant such permission, they may revoke it at any time, if they so choose.

More specifically, the following are a few examples of academic dishonesty which have been discovered at Purdue University.

- substituting on an exam for another student
- substituting in a course for another student
- paying someone else to write a paper and submitting it as one’s own work
- giving or receiving answers by use of signals during an exam
- copying with or without the other person’s knowledge during an exam
- doing class assignments for someone else
- plagiarizing published material, class assignments, or lab reports
- turning in a paper that has been purchased from a commercial research firm or obtained from the internet
- padding items of a bibliography
- obtaining an unauthorized copy of a test in advance of its scheduled administration
- using unauthorized notes during an exam
- collaborating with other students on assignments when it is not allowed
- obtaining a test from the exam site, completing and submitting it later
- altering answers on a scored test and submitting it for a regrade
- accessing and altering grade records
- stealing class assignments from other students and submitting them as one’s own
- fabricating data
- destroying or stealing the work of other students
- Uploading any materials from this course, including your own assignments, to websites such as Chegg or Course Hero, at any time during or after your enrollment in the course.

Purdue’s Honor Pledge

“As a boilermaker pursuing academic excellence, I pledge to be honest and true in all that I do. Accountable together - we are Purdue.”

www.purdue.edu/provost/teachinglearning/honor-pledge.html

LAB SCHEDULE

Week	Date	Experiment / Topic	Written Assignment // Notes
1	Jan 19/21	Lab introduction: Biochemistry boot camp // Lab 1	REMOTE ASYNCHRONOUS LAB! No Pre-Lab Quiz. Lab assignment.
2/3	Jan 26/28 Feb 2/4	Lab introduction: Acids, bases and buffers Lab 2	Lab assignment 2A: Buffer calculations Lab assignment 2B: Create a rubric
4/5	Feb 9/11 Feb 16/18	Lab introduction: Spectrophotometry Lab 3	Lab assignment 3A: Determining concentrations Lab assignment 3B: Create a rubric
6	Feb 23/25	Lactate Dehydrogenase Purification I: Salt precipitation week 1. Lab 4a	Lab assignment 4A: Purification table (should be mostly done before you leave lab, but make sure the whole team understands!)
7	Mar 2/4	Lactate Dehydrogenase Purification I: Salt precipitation week 2. Lab 4b	Lab assignment.4B: Partial lab report: Title, Introduction, Data
8	Mar 9/11	Data Catch-Up!	REMOTE SYNCHRONOUS LAB. Plan on being online during regular lab time to discuss data and your purification tables so far.
9	Mar 16	Midterm written exam.	Written exam (~60 minutes) will be remote.
10	Mar 23/25	Open Lab Practice!	
11	Mar 30 / Apr 1	Midterm practical exam	Practicum exam (40 minutes): Protein determination (Bradford) assay.
12	Apr 6/8	Lactate Dehydrogenase Purification III: Gel Filtration Chromatography. Lab 5	Lab assignment 5A: Purification table and other data Lab assignment 5B: Discussion
13	Apr 13/15	Lactate Dehydrogenase Purification II: Ion Exchange Chromatography. Lab 6	Lab assignment.6A: Complete Data & Results from Labs 4-7
14	Apr 20/22	LDH wrap-up. Experimental Design introduction	Full Lab Report! Make sure you use the feedback from your other assignments
15	Apr 27/29	Experimental Design discussions.	REMOTE SYNCHRONOUS LAB. <u>Experimental design report due via Brightspace before this class begins.</u> Should be a detailed experimental protocol as instructed in class. Include background/introduction, hypothesis, method. No results or discussion sections required.
16	May 4-6	Final Exam	REMOTE. Cumulative ~2-hour exam.

Schedule is subject to change.

Other Useful Dates (see Purdue [Academic Calendar](#) for more)

Jan 19 – Classes begin

Feb 17 – Reading day

Mar 18 – Reading day

Apr 13 – Reading day

May 1 – Classes end

May 8 – Semester ends

May 11 – Dr. Hart's birthday. Oh, and Final Grades due.

Lab Safety

1. Approved **safety goggles** (with sideguards) must be worn by all persons (faculty/instructors, teaching assistants and students) in the laboratory any time there is work in progress by anyone. You are responsible for providing your own. Talk to Dr. Hart if this is a problem.
2. **Lab coats** must be worn by all persons (faculty/instructors, teaching assistants and students) in the laboratory any time there is work in progress by anyone. Lab coats may be purchased at the University Book Store, or Follet's. You will not be permitted to take part in any lab activity without your lab coat. All PPE, except your facemask, should be removed before you leave the lab.
3. **Eating**, chewing gum, and/or **drinking** in the laboratory is strictly forbidden.
4. Many laboratory chemicals/reagents are **toxic**. If instructed to smell reagents, do so with great caution, and NEVER put your nose over the bottle! Avoid looking into the mouth of any reaction vessel or test tube; instead, view from the side. Never point a test tube at anyone.
5. **Proper attire** must be worn at all times. Closed-toe shoes are required at all times in the lab. The hemlines of shorts, skirts and dresses must be no higher than knee-length. Failure to adhere to the dress code will result in a grade penalty for the first occurrence, and you may be asked to leave the lab for further occurrences.
6. **Hair** that reaches the shoulders or longer must be tied back. Caps or hats must not be worn.
7. No one will perform **any unauthorized experiments**, nor will students work in the lab alone, or outside of regularly scheduled hours.
8. Keep a **clean working area**. Books, book bags, jackets etc. and paper should not clutter the workbench. Keep chairs and book bags recessed under cabinets when not in use.
9. Do not leave the lab until you have **cleaned up your work area** and returned supplies and equipment to the appropriate area if necessary.
10. Follow the guidelines of your instructor or teaching assistant when handling any **hazardous materials**. Be aware of the safety labeling on containers to identify risks associated with the materials.



11. Follow the guidelines of your instructor or teaching assistant for **waste disposal**. Dispose of the excess chemicals in the proper waste container, as indicated by the lab instructor or teaching assistant.
12. When pouring something out of a reagent bottle, always **READ THE LABEL TWICE** to be certain that you are using the correct material.
13. **Label** all chemical containers and test tubes before use to avoid mix-ups.
14. If you spill something, **clean it up (GET HELP WITH HAZARDOUS MATERIALS)!** Wash your hands immediately after skin contact with any chemical reagent. Also wash them after lab. If liquids drip down the side of the bottle, while pouring, wash the bottle off.
15. NEVER return excess chemicals to the reagent bottle.
16. Exercise care when **handling glass**.
 - a. Do not use broken or chipped glassware.
 - b. Do not leave pipettes sticking out of bottles, flasks or beakers.
 - c. Do not attempt to remove stoppers on glass tubing by force.
 - d. Hot glass must be handled with heat-resistant gloves, and any container containing heated materials must remain vented and be handled with extreme caution.
17. Do not operate **centrifuges** without supervision from instructor or teaching assistant.

GENERAL SAFETY AND FIRST AID

18. Aisles and exit routes must not be obstructed in any way. Therefore, keep the stools pushed under or next to the bench. Keep book bags and other personal items where they will not be an obstruction hazard.
19. Report all accidents of any type to your instructor immediately. This includes electrical shocks, chemical spills, and bodily exposure to chemicals, biologics and all other types of exposures and/or injuries.
 - a. The instructor, in consultation with the teaching lab coordinator, if necessary, will evaluate the exposure, counsel the student, and treat the exposure as deemed appropriate.
 - b. If deemed necessary, the student will be referred to PUSH for consultation/medical treatment.
 - c. An Incident Report Form must be completed for all exposures and/or injuries that occur in the teaching lab (BCHM 107) and a copy provided to the student and teaching lab coordinator.
 - d. In the case of ANY incident resulting in injury to a student, the student is advised to receive medical attention from PUSH. Department of Biochemistry lab personnel are not medical professionals, and medical opinions can only be obtained from PUSH.
20. An eyewash station and safety shower are located next to the sink on the north end of the lab. These should be used in the event of exposure of the eyes to hazardous materials or skin exposure to hazardous materials that cannot be managed using a faucet at the sink. Do not hesitate to use these if an exposure to hazardous material has occurred.
21. A first aid cabinet is located in the laboratory. Notify the instructor when items are used so supplies may be replaced.
22. In the case of fire in the lab, immediately notify the instructor or teaching assistant and use the RACE acronym:
 - a. REMOVE anyone from danger.
 - b. ALARM – activate the fire alarm first. Then call 911.
 - c. CONTAIN – contain the fire, close doors and windows etc. when leaving the area.
 - d. EXTINGUISH – Only if you have been trained in its use *and* it is safe for you to do so, use the fire extinguisher to control the fire.

NOTE: There is a carbon dioxide fire extinguisher in the lab to the right of the whiteboard. Do not attempt to use it unless you have been trained in its use. It may be used on liquid fires and electrical fires only.

EVACUATION PROCEDURES

The building alarm will sound inside the building in the case of fire, or other emergency that requires your evacuation.

- e. If this alarm sounds, you must evacuate the building immediately.
- f. Shut off any equipment that you were using, remove personal protective equipment, gather your personal items if the situation permits and leave immediately through the main exit onto South University Street.
- g. Proceed to the emergency assembly area outside NLSN. Notify your instructor if you notice that one of your lab colleagues is no longer with your group. Do not leave this area without consulting directly with your instructor.

SHELTER-IN-PLACE PROCEDURES

The outdoor all-hazards alarm will sound if you need to shelter in place due to inclement weather (including tornadoes), hazardous materials release, active shooter or other civil disturbance.

- h. To shelter-in-place, follow the directions of your instructor.
- i. Do not leave the building unless you are cleared to do so by your instructor.

Thank you for reading the syllabus! I know this is a lot of information, so please refer back to it throughout the semester for answers to questions about grading policies, schedules and more. **As a token of appreciation for your reading this, you will receive 10 points extra credit if you email Dr. Hart (ohart@purdue.edu) with a photo of a cute baby animal by the end of the first week of classes. Deadline: 11:59pm, Sunday January 24th, 2021.**

Department of Biochemistry Teaching Laboratory (BCHM 107)

Syllabus Agreement & Safety Rules

Student acknowledgement and declaration of cooperation.

Course: BCHM 309

Semester: Spring 2021

Instructor: Dr. Hart

I have read and understand the content of the syllabus for this course, and agree to abide by the policies of this course.

I have read the safety rules for the Department of Biochemistry Teaching Laboratory (BCHM 107), understand all of the procedures, and agree to abide by them. I understand that failure to comply with safety procedures could result in the suspension of my laboratory privileges or disenrollment from the course.

Signed _____

Date _____

**Department of Biochemistry Teaching Laboratory (BCHM 107)
Incident Report Form – Undergraduate Student**

Student Name:	Course:										
Major:	Instructor:										
Date/Time of incident:	Student Phone:										
	E-Mail:										
Witness(es):											
Description of incident: Include the use of Personal Protective Equipment, chemical hood or other environmental control, safety equipment (attach additional pages if necessary).											
Did the incident result in an injury: Yes <input type="checkbox"/> No <input type="checkbox"/> Description of injury:											
Details of action taken:											
Did student indicate they would visit PUSH?: Yes <input type="checkbox"/> No <input type="checkbox"/> NOTE: The Department of Biochemistry asks students to visit PUSH to have all injuries evaluated by trained medical professionals.											
Emergency response information (include EH&S, fire, police, ambulance response present at the scene):											
Copy of this completed form provided to: <table style="width: 100%; border: none;"> <tr> <td style="width: 50%;">Student:</td> <td style="width: 10%; text-align: center;">Yes <input type="checkbox"/></td> <td style="width: 10%; text-align: center;">No <input type="checkbox"/></td> <td style="width: 10%;"></td> </tr> <tr> <td>Dr. Hart:</td> <td style="text-align: center;">Yes <input type="checkbox"/></td> <td style="text-align: center;">No <input type="checkbox"/></td> <td></td> </tr> </table>				Student:	Yes <input type="checkbox"/>	No <input type="checkbox"/>		Dr. Hart:	Yes <input type="checkbox"/>	No <input type="checkbox"/>	
Student:	Yes <input type="checkbox"/>	No <input type="checkbox"/>									
Dr. Hart:	Yes <input type="checkbox"/>	No <input type="checkbox"/>									
Instructor Signature:	Student Signature:										
Date:	Date:										