

## Integrated Chemistry for Health Sciences – CHEM 1130

Section 001, MWF, 9:40 – 10:30 AM in HEB 2008

Required Discussion and Lab sections 002 - 013

### Instructor Contact Information

Instructor: Dr. Sarah Lefave

Office HEB 3207

E-mail: [s.lefave@utah.edu](mailto:s.lefave@utah.edu) (NOT CANVAS E-MAIL)

Office Hours: TBD – will be held in the Curie Club, 2<sup>nd</sup> floor of TBBC (Thatcher) building

Please contact me at [s.lefave@utah.edu](mailto:s.lefave@utah.edu) and include “CHEM 1130” in the subject line of all e-mails (and time frame if it is urgent). Do **NOT** use canvas email, the notifications are unreliable. Please limit e-mails to personal questions or concerns about the course that require individual attention. Generally, expect a **24-hour response time** (except on weekends or holidays which may be slower). For questions about course content or logistics, use the discussion boards on Canvas as other students might also benefit from this information.

Note: Following FERPA guidelines, I cannot discuss grades or grading matters by e-mail.

### Course Pre-requisites

None, Math 1010 (Intermediate Algebra) or equivalent is encouraged

### Course Description and Goals

CHEM 1130 is designed to introduce those in the nursing or allied health science fields to chemistry theories, techniques, and analyses with a focus on how they are related to health sciences. This course covers a broad range of chemistry topics and includes a laboratory component which will introduce you to experimental laboratory techniques and analyses. CHEM 1130 satisfies the University General Education criteria and a Science Foundation (SF) course.

### Required Materials

#### Textbook and Lab Manual:

General, Organic, and Biological Chemistry: Precise, Practical, Integrated – 4<sup>th</sup> Edition by Frost & Deal. Electronic access is provided through Canvas. The lab manual will be provided in pdf form and distributed freely through Canvas.

#### Website:

We will use [Canvas](#) for ALL our course communications and a significant number of assignments. [CHEM 1130 – 001](#) will be used for all lecture and lecture related communications. For all discussion/laboratory communications and assignments, [CHEM 1130 – 002](#) will be used regardless of which section you registered for. It is required to have a good internet connection. The University campus provides high-speed internet access and many good study areas.

Laboratory:

1. Laboratory notebook
  - This notebook will be used to take notes on any observations you have during your lab section and complete any lab related calculations or questions. Your notebook **must have a sewn binding** (ex: composition book, and NOT spiral bound).
2. Safety glasses or goggles meeting the ANSI Z87.1 specification
  - Safety glasses and lab coats can be purchased from the campus store or the American Chemical Society (ACS) Student Affiliates who will be present in the chemistry lobby likely during the second week of the semester. The exact times will be posted on Canvas.
3. Lab Coat that is 100% cotton
  - When you enroll in lab, you are automatically opted-in to a FREE lab coat program. We have lab coats available for any student to use; however these are shared among students and chemistry sections. If a student would prefer a personal lab coat, one can be purchased (and stored in a locked lab drawer) from campus store or other vendors. Please note that the lab coat **MUST be 100% cotton**.
4. Combination lock (one per lab group)
  - The lock **must be a combination lock**; not a keyed or finger-print lock.
  - Some locks are available for free check-out from the general chemistry stockroom on the first day of lab; However it is a first-come, first-served basis and the locks may run out at any time.

Other:

Scientific calculator: TI-30 or equivalent (non-graphing)

Course Structure

This course includes a lecture component (**MWF 9:40 – 10:30 AM**) and a discussion/laboratory section (**Mon. or Tues. at various times**). The discussion/laboratory sections are led by an experienced teaching assistants and meet weekly on Monday or Tuesday in Sections 002-009 at the times listed in the class schedule. This time will be split between a discussion and a laboratory experiment.

Lecture:

- **Attendance:** Attendance for this course is required. Attendance will be measured by in-person quizzes. If you complete 80% of the lecture quizzes, you will get full credit for attendance.
- **Lecture:** Lectures take place on MWF from 9:40 – 10:30 AM. They will consist of Professor lecturing, group problem solving, quizzes, and exams. Attendance is critical to your success in the course.
- **Problem Solving:** During each lecture we will work through chemistry problems that require analysis of chemical structure, reactions, and chemical concepts. The problems we solve in class will be directly related to homework problems and exam questions.

Discussion/Laboratory structure:

- **Pre-lab:** A pre-lab quiz is required for admission to the discussion/laboratory section. These will be taken on canvas and due on **Monday's at 11:59 AM**. The **Canvas Site CHEM 1130-002 will be used for all discussion and laboratory communications including pre-lab quizzes**.
- **Attendance:** Attendance is required. To pass this course, you must complete the laboratory component. Your TA will take attendance every week during your discussion/laboratory section. There are NO virtual labs. The two lowest lab/discussion assignments will be dropped.
- **Discussion:** During the discussion, we will work through homework and exam type questions focusing on problem solving techniques. The **Canvas Site CHEM 1130-002 will be used for all discussion and laboratory communications**.
- **Laboratory:** The laboratory will be a hands on experience where we apply quantitative and qualitative methods for scientific investigation. Points for laboratory are given when you complete the lab. There are no lab reports. The **Canvas Site CHEM 1130-002 will be used for all discussion and laboratory communications**.

Assignments:

- **Pre-labs:** Pre-lab quizzes are due every **Monday before 11:59 AM on Canvas**. These will cover procedural questions about the laboratory experiment to be performed that week.
  - You are required to complete the pre-lab. **No late work will be graded**.
  - If you do not complete the pre-lab you will NOT be allowed to complete the laboratory that week. You can complete the assignment late to be allowed into lab but you will NOT be given points for the assignment.
- **Homework:** Homework assignments will be completed using the electronic homework system on Canvas. **Homework is due every Thursday before 11:59 PM on Canvas**.
  - It is required to have a good internet connection to complete these assignments. The University campus has great internet and many available workspaces for use.
  - Proficiency with Canvas is required for this course, please visit the following website for technical assistance at any time.  
<https://digitallearning.utah.edu/canvas-help.php>
- **Communication Skills:** Communication skills are essential for interacting with patients and peers in a medical setting. To train and assess your skills, there will be **online assignments** (through Canvas) throughout the semester where you will discuss complex chemical concepts in relation to a problem of interest.
- **Midterms:** There are four in-class midterm exams (schedule listed below). Each mid-term will consist of qualitative and quantitative assessments of course material. Homework and discussion will directly prepare you for the midterms.
  - Midterms will be ~40% of your total grade.
  - Your lowest midterm score will be replaced by the final exam.
  - There are **no makeups for midterms aside from an emergency**. Vacation or work do not count and as emergency. Do not make commitments during the exam times listed below.
- **Final Exam:** Your final is on **Wednesday, December 13, from 8:00 – 10:00 AM**.
  - The final exam will be 5% of your total grade.
  - It will cover material from the entire semester.

- You may replace your lowest midterm score with the final exam (provided your final exam is higher than your lowest midterm).
- **You may NOT replace your final exam score.**
- There are no make-up exams with the exception of emergency situations.

### Course Schedule

This schedule is tentative and subject to change at any time; any revisions will be announced on Canvas

Week	Dates	Lab Description
1	Aug 20 – 27	Introduction and Ch 1: Chemistry Basics – Matter and Meas.
2	Aug 28 – Sept 3	Ch 1: Chemistry Basics – Matter and Measurement
3	Sept 4 – 10	Ch 2: Atoms and Radioactivity
4	Sept 11 – 17	Ch 3: Compounds – How Elements Combine
<b>5</b>	<b>Sept 18 – 24</b>	<b>Exam 1: Ch 1 – 3</b> and Ch 4: Intro to Organic Compounds
6	Sept 25 – Oct 1	Ch 4: Intro to Organic Compounds and Ch 5: Chemical Rxns
7	Oct 2 – 8	Ch 5: Chemical Reactions and Ch 6: Carbohydrates
8	Oct 9 – 15	No Classes: Fall Break
<b>9</b>	<b>Oct 16 – 22</b>	Ch 6: Carbohydrates and <b>Exam 2: Ch 4 – 6</b>
10	Oct 23 - 29	Ch 7: States of Matter and Ch 8: Solution Chemistry
11	Oct 30 – Nov 5	Ch 8: Solution Chemistry and Ch 9: Acids, Bases, and Buffers
12	Nov 6 – 12	Ch 9: Acids, Bases, and Buffers and Ch 10: Proteins
13	<b>Nov 13 – 19</b>	<b>Exam 3: Ch 7 – 9</b> and Ch 10: Proteins
14	Nov 20 – 26	Ch 10: Proteins and Ch 11: Nucleic Acids
15	Nov 27 – Dec 3	Ch 11: Nucleic Acids and Ch 12: Metabolism
16	Dec 4 – 10	Ch 12: Metabolism and <b>Exam 4: Ch 10 – 12</b>
17	Dec 11 – 17	No Classes: Final Exam Week <b>Final Exam: Wednesday December 13, 2023 8:00 – 10:00 AM</b>

Note: This syllabus is meant to serve as an outline and guide for our course. Please note that I may modify it at any time with reasonable notice to you. I may also modify the Course Schedule to accommodate the needs of our class. Any changes will be announced on Canvas under Announcements and updated on the Canvas homepage.

### Course Goals

This lecture and laboratory course is an introduction to a broad range of chemistry topics. Success in CHEM 1130 requires critical and conceptual thinking. Chemistry is a challenging subject but also key foundational material for the academic and career path you have chosen in the broad landscape of health care professions.

This course will focus on the molecular basis of life building up from the ultra-small components of the atom to large biological assemblies. Somehow we will accomplish this in one semester! The key to success in chemistry is learning to solve problems – both quantitative and

conceptual. By the end of this course you will be able to:

1. Connect scientific understanding in general, organic, and biological chemistry to real world phenomena in the health sciences.
2. Perform and record lab measurements covering a range of analytical techniques.
3. Perform chemical calculations to support chemical theories and observations.
4. Communicate evidence-based scientific results and theories.
5. Confidently explore new scientific challenges in health science and other related disciplines.

### Course Evaluation

For CHEM 1130, grades will be assigned according to the following scale:

Percentage score	Course grade	Percentage score	Course grade
93.0—100	A	77.0—79.9	C+
90.0—92.9	A-	68.0—76.9	C
87.0—89.9	B+	60.0—67.9	D
83.0—86.9	B	< 60.0	F
80.0—82.9	B-		

At the end of the semester, each student's course grade will be calculated based on the following:

Lecture Attendance	5%
Quizzes	5%
Homework	25%
Pre-lab quizzes	5%
Discussion/laboratory	15%
Midterms	40%
Final Exam	5%
Total	100%

Grades will be entered on Canvas throughout the semester. You should always double-check the entered grades for accuracy on a regular basis. If you believe there to be an error in entering a grade correctly, you should contact your TA immediately with your concern. For this reason, (and others), it is a good idea to review your graded lab reports.

Any concerns about grades (such as a petition for more points on an answer) should be brought to the professor, not your TA. If you are concerned that a report was not scored fairly, please submit a regrade request with the original document attached and a summary of your position within two weeks of the lab being graded. All regrade requests will be completed at the END of the semester.

### Additional Information

You will have the opportunity to collaborate with your classmates during lab and discussion sessions and you may find it useful to form a small study group, participate in Supplemental Instruction sessions and attend TA office hours. However, all work submitted for this course must be your own and completed without any additional human or electronic resources.

By submitting an assignment, you are representing that it is your own work and that you have followed the rules associated with the assignment. Incidents of academic misconduct (including cheating (copying other's work, asking someone else or the internet to do work for you, etc.), plagiarizing, research misconduct, misrepresenting one's work, and/or inappropriately collaborating on an assignment) will be dealt with severely, in accordance with the Student Code ([deanofstudents.utah.edu/accountability/studentcode](http://deanofstudents.utah.edu/accountability/studentcode)). A single instance of academic misconduct may result in a failing grade for the course. This includes plagiarism on lab reports. You MUST complete and submit a laboratory report prepared by you INDIVIDUALLY, you and your lab partner cannot submit the same report. Multiple instances of academic misconduct may result in probation, suspension or dismissal from a program, suspension or dismissal from the University, or revocation of a degree or certificate.

### Late Policies:

Discussion/Laboratory sessions:

During the first 15 minutes of laboratory, you will check-in with your TA and they will provide detailed information regarding safety procedures, safe handling of chemicals, and proper disposal procedures for the experiment. If you arrive after this introduction, YOU WILL NOT BE ALLOWED TO ENTER THE LAB AND WILL RECEIVE A ZERO FOR BOTH THE CHECK-OUT POINTS AND THE LAB REPORT. It is your responsibility to be on time to lab and wearing appropriate PPE. If you are consistently late every week, you will be asked to leave laboratory which can result in a failing grade.

Work:

No late work will be accepted. If you realize that you will not be able to attend a lecture or lab/discussion your homework and pre-lab assignments ARE STILL DUE. Note that the two-dropped pre-lab quizzes, homework assignments, and 20% of lecture attendance to account for any unforeseen circumstances, including the need to submit late work.

Technological Issues:

It is the student's responsibility to maintain computers and related equipment to participate in this course. Equipment failures will not be an acceptable excuse for late or absent assignments. Additionally, the library has many resources and equipment available for borrowing.

NOTE: It is the student's responsibility to make sure the correct file and format is submitted to Canvas BEFORE the due date. Once an assignment file is submitted, I recommend double checking the file to determine it uploaded correctly.

## University Policies

### Academic Dishonesty:

By submitting an assignment, you are representing that it is your own work and that you have followed the rules associated with the assignment. Incidents of academic misconduct (including cheating (copying other's work, asking someone else or the internet to do work for you, etc.), plagiarizing, research misconduct, misrepresenting one's work, and/or inappropriately collaborating on an assignment) will be dealt with severely, in accordance with the Student Code ([deanofstudents.utah.edu/accountability/studentcode](https://deanofstudents.utah.edu/accountability/studentcode)). A single instance of academic misconduct may result in a failing grade for the course. This includes plagiarism on lab reports. You MUST complete and submit a laboratory report prepared by you INDIVIDUALLY, you and your lab partner cannot submit the same report. Multiple instances of academic misconduct may result in probation, suspension or dismissal from a program, suspension or dismissal from the University, or revocation of a degree or certificate.

### The American with Disabilities Act:

The University of Utah seeks to provide equal access to its programs, services, and activities for people with disabilities. If you need accommodations in this class, reasonable prior notice needs to be given to the Center for Disability Services (CDS), 162 Olpin Union Building, (801) 581-5020. CDS will work with you and the instructor to make arrangements for accommodations. All written information in this course can be made available in an alternative format with prior notification to the Center for Disability Services.

### Diversity Statement:

Diversity is crucial to our pursuit of academic excellence, and we are deeply committed to creating a diverse and inclusive community. I believe that all persons should be enabled to learn chemistry. Please do not hesitate to reach out to me if you are treated in a manner that is inconsistent with this.

### Pronouns:

Class rosters are provided to the instructor with the student's legal name as well as "preferred first name" (if previously entered by you in the Student Profile section of your CIS account, which can be updated at any time). While CIS refers to this as merely a preference, I will honor you by referring to you with the name and pronoun that feels best for you. Please advise me of any name or pronoun changes so I can help create a learning environment in which you, your name, and your pronoun are respected. Additionally, you can list your pronoun on Canvas. If you need any assistance or support, please reach out to the LGBT Resource Center ([lgbt.utah.edu](https://lgbt.utah.edu)).

### Sexual Misconduct, Discrimination, and Related Retaliation:

The University of Utah is committed to fostering a positive and safe learning, working, and living environment. Sexual Misconduct, Discrimination and Retaliation are prohibited by University Policy. Faculty and staff have a responsibility to inform the Office of Equal Opportunity and

Affirmative Action (OEO/AA) when made aware of incidents of sexual misconduct, discrimination, and related retaliation, to ensure that individuals impacted receive information about options for reporting and supportive resources. Incidents may come to the attention of faculty and staff in any way, including through face-to-face conversations, admissions or scholarship applications or essays, a written class assignment or paper, class discussion, e-mail, text, or social media post. This obligation applies regardless of where or when an incident occurred, including if it occurred off campus and/or before they were a member of the campus community. Additional information can be found on the OEO website or you may contact [oeo@utah.edu](mailto:oeo@utah.edu) or (801) 581-8365. If you wish to seek support confidentially, please contact the Victim-Survivor Advocates (801) 581-7776 or [advocate@sa.utah.edu](mailto:advocate@sa.utah.edu).

#### Office of the Dean of Students:

The Office of the Dean of Students ([deanofstudents.utah.edu](http://deanofstudents.utah.edu)) is dedicated to being a resource to students through support, advocacy, involvement, and accountability. It serves as a support for students facing challenges to their success as students, and assists with the interpretation of University policy and regulations. Please consider reaching out to the Office of Dean of Students for any questions, issues and concerns. 200 South Central Campus Dr., Suite 270. Monday-Friday 8 am-5 pm.

#### University Counseling Center

The University Counseling Center (UCC, [counselingcenter.utah.edu](http://counselingcenter.utah.edu)) provides developmental, preventive, and therapeutic services and programs that promote the intellectual, emotional, cultural, and social development of University of Utah students. They advocate a philosophy of acceptance, compassion, and support for those they serve, as well as for each other. They aspire to respect cultural, individual and role differences as they continually work toward creating a safe and affirming climate for individuals of all ages, cultures, ethnicities, genders, gender identities, languages, mental and physical abilities, national origins, races, religions, sexual orientations, sizes and socioeconomic statuses.

#### Campus Safety:

The University of Utah values the safety of all campus community members. To report suspicious activity, call campus police at (801) 585-COPS ((801) 585-2677). You will receive important emergency alerts and safety messages regarding campus safety via text message. For more information regarding safety and to view available training resources, including helpful videos, visit [safeu.utah.edu](http://safeu.utah.edu).

#### Student Success Advocates:

The mission of Student Success Advocates is to support students in making the most of their University of Utah experience ([ssa.utah.edu](http://ssa.utah.edu)). They can assist with mentoring, resources, and more. Any student who faces challenges securing their food or housing and believes this may affect their performance in the course is urged to contact a Student Success Advocate for support.



### Veteran's Center

If you are a student veteran, the UoU has a Veterans Support Center. Please visit their website for more information about what support they offer, a list of ongoing events and links to outside resources: [veteranscenter.utah.edu](http://veteranscenter.utah.edu). Please also let me know if you need any additional support in this class for any reason.

### English Language Learners:

If you are an English language learner, please be aware of several resources on campus that will support you with your language and writing development. These resources include the Writing Center ([writingcenter.utah.edu](http://writingcenter.utah.edu)), the Writing Program ([writing.utah.edu](http://writing.utah.edu)), and the English Language Institute ([continue.utah.edu/eli](http://continue.utah.edu/eli)). Please let us know of any additional support you would like to discuss for this class.

### Undocumented Student Support:

Immigration is a complex phenomenon with broad impact, including those who are directly affected by it, as well as those who are indirectly affected by their relationships with family members, friends, and loved ones. If your immigration status presents obstacles to engaging in specific activities or fulfilling specific course criteria, confidential arrangements may be requested from the Dream Center. Arrangements with the Dream Center will not jeopardize your student status, your financial aid, or any other part of your residence. The Dream Center offers a wide range of resources to support undocumented students (with and without DACA), as well as students from mixed-status families. To learn more, please contact the Dream Center at 801.213.3697 or [visit dream.utah.edu](http://visit.dream.utah.edu).

### Wellness

Personal concerns such as stress, anxiety, relationship difficulties, depression, cross-cultural differences, etc., can interfere with a student's ability to succeed and thrive at the University of Utah. For helpful resources contact the Center for Student Wellness at [wellness.utah.edu](http://wellness.utah.edu) or (801) 581-7776.

### COVID-19 Recommendations:

The University of Utah is a mask friendly campus. The U has implemented reasonable health and safety protocols, taking into account recommendations by local, state and national public health authorities, in response to the COVID-19 pandemic. For the most up-to-date information on COVID-19 protocol, please refer to [coronavirus.utah.edu/](http://coronavirus.utah.edu/). Additionally, if you are feeling sick, you are encouraged to wear a mask to lab or take a sick day (flexibility is incorporated for this).