General Chemistry II Chem 178 Fall 2022 Sections 3, 5, 6, 8, 9, 11

3 credits = 2 lecture hours + 1 recitation hour per week

Lectures: Tuesday & Thursday 11 - 11:50 am, GILMAN 1002

Recitations: meet on Fridays (check schedule for your section)

Chem 178 is the second semester of a full-year rigorous introduction to and overview of fundamental chemical principles. This course will help you understand everyday observations from a chemical point of view, how chemistry is indeed the "central science," and how a solid understanding of chemistry helps to improve our lives and the life of our planet. You will continue to acquire and enhance your chemical vocabulary, develop skills in using the language and formulae of chemistry to perform quantitative calculations, and will be able to apply fundamental chemical concepts to estimate and predict various phenomena. Current research topics and applications will be explored to help demonstrate the relevance of chemistry. The problem-solving and analytical skills utilized in this course will help prepare you for critical thinking and problem-solving in your college and professional career. This course will prepare you for your future chemistry and science coursework.
In particular, CHEM 178 involves the study of chemical reactions, their kinetic and thermodynamic characteristics. Acid-base and reduction-oxidation (redox) reactions will be emphasized. The course concludes with a discussion of nuclear chemistry.

Catalog: Continuation of 177. Recommended for physical or biological science majors, chemical engineering majors, and all others intending to take 300-level chemistry courses.

Course Objectives

- Students will learn to use the language of chemistry: symbolic representation, nomenclature, and terminology.
- Students will learn to think about chemical reactions and chemical and physical properties at the particulate level and will be able to visualize and depict the structure of matter and its reactions at the microscopic (atomic and molecular) level.
- Students will gain a conceptual understanding of and will be able to perform qualitative and quantitative problem-solving skills in thermodynamics, chemical equilibria, chemical kinetics, electrochemistry and nuclear chemistry.
- Students will gain an appreciation for and understanding of the importance of chemistry and a chemical perspective of the world.
- Students will be able to use their knowledge to analyze and construct solutions for new and unfamiliar problems.

Course Outcomes

By successfully completing CHEM 178, students will be able

- to recognize kinetic and thermodynamic features of chemical reactions.
- to evaluate the important characteristics of chemical and physical equilibria.
- to recognize acid-base reactions.
- to recognize reduction-oxidation (redox) reactions.
- to represent any chemical process using a balanced chemical equation.

Grading Policy

Hours Exam I	(Sep. 20)	100 pts	15%
Hours Exam II	(Oct. 18)	100 pts	15%
Hours Exam III	(Nov. 29)	100 pts	15%
Recitation Worksheets (10 pts each)		120 pts	15% (best 12 outcomes)
TopHat Questions (based on a cumulative Top Hat score of 75%)			10%
OWLv2 Mastery Problems		172 pts	15% (based on 150 pts)
Final Exam (cumulative)			15%
Total			100%

Students will retain all points earned for TopHat Lecture Questions and OWLv2 Mastery Problems, which may result in bonus points toward the final grade. The bonus point will be applied at the end of the semester.

Tentative letter grade assignments will be as follows: "A," 88-100%; "B," 74-88%; "C," 74-60%; "D," 60-48%; "F", 0-48%. Important: final grades are based solely on graded work and are NOT negotiable. +/– grading will be used for the final grade, but these specific ranges will be determined once all scores for the academic semester are entered.

Instructor

Dr. Julia Zaikina, Assistant Professor **E-mail:** chem178aq@iastate.edu

Office Hours: Tuesday & Thursday, noon – 1 pm, Hach 2140, or by appointment (via Webex). Please communicate via e-mail at least 24 hours (48 hours on week-ends) prior to any appointment and indicate at least two scheduling options.

Head TA: Faysal Ahmed **E-mail:** chem178aq@iastate.edu

Office Hours: TBA*, or by appointment.

Section	Recitation Day/Time	Room	Teaching Assistant
3	Friday, 8:50-9:40 AM	Gilman 1811	Kyle Malcom
5	Friday, 9:55-10:45 AM	Gilman 1805	Divya Christy
6	Friday, 9:55-10:45 AM	Gilman 1811	Kyle Malcom
8	Friday, 11-11:50 AM	Gilman 1811	Daniel Del Angel Cruz
9	Friday, 12:05-12:55 PM	Gilman 1805	Daniel Del Angel Cruz
11	Friday, 2:15-3:05 PM	Gilman 1811	Faysal Ahmed

* Check https://www.chem.iastate.edu/chemistry-help-room for updated hours in the Martha E. Russell Chemistry Help Center in 1761 Gilman Hall.

Contacting the Instructor or Head TA: We encourage you to contact the Instructor or Head TA using the following methods:

- Use the **Discussions** on the **Canvas course page** to ask questions/concerns about the course (navigating Canvas, lecture videos, quizzes, exams, how to approach a homework problem, etc.)
- Use **email** (chem178aq@iastate.edu.) for questions/concerns that are personal in nature (scheduling an appointment; SAAN, etc.)

Response time is approximately 24 hours.

All e-mails to the Instructors, the Head TA, or your recitation TA are formal communications. Therefore, proper written etiquette is expected. The *Subject line* on your email must contain "Re: CHEM 178-A" followed by a brief description of the message topic. If the topic of your message to your Instructor involves your TA, *be sure to provide your TA's name*. Any matters which the Instructors feel are of interest to the class will be addressed during a lecture or by an announcement via Canvas.

Course Format

In-person lectures and recitations over 15 weeks. Lectures will follow the tentative course schedule - any changes will be announced during the lecture periods. Students are expected to read the assigned text material before coming to lecture, participate actively during lecture and recitation, complete homework and recitation excitements before the deadline, come to the scheduled exams. Lectures will use PowerPoint and some board work along with occasional demonstrations and in-class problem-solving.

Chem 178L students must be enrolled in or have credit for 178.

To show proper respect to your colleagues and the instructors, put aside the ISU Daily, do not use iPads, iPods, laptops, or other PDA devices for messaging, Facebook, Twitter, etc., internet browsing, streaming videos, etc. during lectures and recitations. Please refrain from any disruptive activities in the classroom, which might affect other students or distract the instructor. Research studies have shown a clear correlation between the use of laptops for entertainment in large lecture settings and LOWER student learning in the lecture environment; students around a laptop user also pay less attention to the content of the lecture. Your instructors and classmates are permitted and encouraged to ask you to discontinue distracting behavior. To help promote a good learning environment for all, please be respectful in your behavior toward your fellow students and your instructors.

- All lectures will be captured (video of screens + audio) and posted in Canvas (Echo 360)
- Previews of lecture slides (PDF format) are available on Canvas. It may be helpful to print or save them to your personal computer for use during the lecture periods.
- Recitations are directed by graduate or undergraduate teaching assistants (TAs), and are intended for discussion of problems concerning the week's topics. During each recitation (15 total), there will be a worksheet. TAs will hold office hours in the Martha Russell Chemistry Help Center, 1761 Gilman Hall.
- Check https://www.chem.iastate.edu/chemistry-help-room for updated hours in the Martha E. Russell Chemistry Help Center.

Prerequisites

CHEM 177, CHEM 177L, or CHEM 167.

CHEM 178 involves the study of chemical reactions and will emphasize acid-base and reduction-oxidation (redox) reactions. Material in this course will build off certain foundations set in CHEM 177 or CHEM 167. If you need to review key topics from these courses, the following list identifies those topics (with Chapters/Sections from the required textbook for CHEM 178) that you may review as the semester progresses:

- *Stoichiometry:* Balancing chemical equations, converting between mass and moles, performing stoichiometric calculations, limiting reagents (Chapter 3)
- *Aqueous Solutions:* Properties, calculating molarity (Chapter 4, Sections 2-3)
- *Gases:* Ideal gas law, partial pressures (Chapter 5, Sections 3-5)
- *Thermochemistry:* First law of thermodynamics, enthalpy, calculating enthalpies of chemical processes (Chapter 6)
- *Lewis Structures:* Drawing simple Lewis structures, resonance, covalent bond strengths and lengths (Chapter 8, Sections 7-12)

Required Materials

1. Textbook: **Chemistry (10th Edition)**, S.S. Zumdahl, S.A. Zumdahl, D.J. DeCoste, G. Adams (2018), Cengage Learning (ISBN: 978-1-305-95740-4).
2. **TopHat** licence.
3. **OWLv2** online homework.
4. An inexpensive scientific, non-programmable (no data storage) **calculator** with basic functions including logarithms and exponential functions, like n x, log x, 10^x, e^x, and y^x functions. No graphing calculators are permitted during tests.

Course Details

- **Textbook:** Chemistry (10th Edition), Steven S. Zumdahl, Susan A. Zumdahl, Donald J. DeCoste. *Cengage Learning*. ISBN-10: 1-305-95740-7; ISBN-13: 978-1-305-95740-4

This is the same book that was used in Chem 177 during the Fall 2021 or Spring 2022 semesters and prior access should still be active. For students who did not take Chem 177 using this book: this text is part of the Immediate Access program at Iowa State, which means that by enrolling in this course you will have the e-book version and on-line homework system (OWL-v2) included as part of your U-Bill.

This course is enrolled in the Iowa State University *Immediate Access Program*. We will be using OWL-v2 for homework assignments.

What is Immediate Access?

Immediate Access is a collaborative affordability initiative between the ISU Book Store, faculty, and publishers. Students that are enrolled in an Immediate Access course will receive access to all required digital course materials the first day of class and at a reduced cost compared to the national average.

What digital content is required for this course?

The following Cengage Learning OWLv2 courseware is required for this course:

- Title: OWLv2 with MindTap Reader, 4 terms (24 months), for Zumdahl/Zumdahl/DeCoste's, Chemistry, 10th Edition
- Authors: Steven S. Zumdahl; Susan A. Zumdahl; Donald J. DeCoste
- Publisher: Cengage
- ISBN: 978-1-305-95758-9
- Price to Student: $41.20
- Duration: 180 days

How do I access the required digital content?

Cengage Learning's OWLv2 courseware is required to do online homework for this course. To access OWLv2 in Canvas for CHEM 178:

1. Go to Modules and follow the instruction under "Cengage Information: …".
2. Register for OWLv2 using your Iowa State email. Once you register for the course, you should have access to the OWLv2 platform. There is no access code to register. If you are prompted to enter an access code or pay for a code, please email *Immediate Access* at immediateaccess@iastate.edu. Do not pay for a new code.
3. An e-Text is included and accessed within the OWLv2 Courseware only. There is no e-Text accessible through the RedShelf Course Materials tool.

Here is a video link for How to Register for OWLv2 in Canvas: https://startstrong.cengage.com/owlv2-canvas-ia-yes/

How is Immediate Access billed?

You will be automatically charged on your u-bill for this digital content. The billing description on your u-bill will appear as CHEM 178 IMMED ACCESS 7589. The amount charged on your u-bill will be the same as the amount listed as the "Price to Student" listed above in the digital content requirements.

What if I drop the course?

Students who drop the course within the first 10 days of class will receive a refund on their u-bill. YOU DO NOT HAVE TO NOTIFY THE BOOKSTORE IF YOU DROP THE COURSE. This is an automated process.

Can I opt out of Immediate Access?

Students may choose to opt out of the program. Opting out does not mean you are dropping the course. It simply means you are choosing not to receive the digital content from the bookstore and you must find another way to acquire it in order to complete required homework assignments. Students have within the first 10 days of class to opt out and receive a refund to their u-bill.

The last day to opt out is September 2nd, 2022. To opt out during the first 10 days of class:

1. Click on the "*Immediate Access Course Materials*" tool on the Canvas Course navigation menu.
2. On the next page, click on the "Want to opt out" bar on the title card for the digital item.

For further questions about Immediate Access please email immediateaccess@iastate.edu or check https://www.isubookstore.com/support

- **Top Hat.** We will be using the Top Hat (www.tophat.com) classroom response system in class. You will be able to submit answers to in-class questions using smartphones, tablets, laptops, or through text messaging.

You can visit the Top Hat Overview page (https://success.tophat.com/s/article/Student-Top-Hat-Overview-and-Getting-Started-Guide) to give you a brief overview about getting you up and running with the system.

You will be required to purchase a TopHat license from the ISU Book Store or online in order to access any quizzes or questions your instructor creates in the Top Hat system.
To register, you must use your ISU email address. Failure to register correctly will result in receiving no credit. Please visit the ISU IT Top Hat support page:
https://www.it.iastate.edu/services/tophat

- you can register by simply visiting our course website: https://app.tophat.com/e/848356
- Our Course Join Code is 848356
- Should you require assistance with Top Hat at any time, due to the fact that they require specific user information to troubleshoot these issues, please contact their Support Team directly via LiveChat in the app support button or by calling 1-888-663-5491. Support Team is available from 9:00 AM to 9:00 PM ET, Monday to Friday.
- Bring your device to all lectures; failure to bring a device to class will result in 0 points for that day. Absolutely no exceptions. The device used for TopHat can be a smartphone, a tablet, or a personal computer. A regular phone can be used to submit answers to multiple-choice, word, or numeric questions; however, it cannot be used to answer "click on target", "sorting", or "matching" questions. CELT can lend you a TopHat-ready device at no additional cost – please contact Lesya Hassall, lesya@iastate.edu
- Sharing the attendance code with classmates who are absent from class, having a classmate give you the attendance code while you are absent from class, submitting answers while absent from class, sharing answers with students who are not in class, etc. constitute academic misconduct.

- **Useful Weblinks (Pages on Canvas):**

TopHat: https://www.it.iastate.edu/services/tophat
TopHat Course website: https://app.tophat.com/e/848356
TopHat Overview: https://support.tophat.com/s/?target=Student-Top-Hat-Overview-and-Getting-Started-Guide
Immediate Access: https://www.isubookstore.com/immediate-access
Periodic Table: http://www.webelements.com/
Interactive simulations: https://phet.colorado.edu/en/simulations/category/chemistry

- **Drops and audits**

Students who drop or audit the Chem 178 lecture will be required to drop the Chem 178L laboratory. The deadline to change a full semester course from audit to credit basis is **August 26th**. Auditing a course does not count toward full-time student status. **August 26th** is a last day to drop a course without the drop appearing on the permanent record or counting toward the limit of dropped courses, last day to process schedule changes without fee.

To add, drop, or switch recitation or lab sections before August 26th, use AccessPlus.

After Aug. 26, please go to the Undergraduate Chemistry Office in 1605 or 1608 Gilman (hours 8:00 am – 12:00 pm and 1:00 – 4:00 pm). The last day to drop a class without extenuating circumstances is **Friday, October 28th**.

Assessments

- **Exams:** Three evening exams are scheduled for **Sep. 20**, **Oct. 18**, and **Nov. 29** (all Tuesday evenings). Exam format is: (a) two pages of multiple-choice questions; (b) two pages of word problems; (c) one-page Information Sheet with appropriate equations and physical constants.

  Question and Answer sessions for each exam are *tentatively* scheduled on Mondays, Sep. 19, Oct. 17, and Nov. 28 from 7-8 pm; they will take place in 1002 Gilman Hall. The exact time and location will be announced.

  To avoid a zero score for a missed hour exam, documentation of a valid reason (e.g., serious medical situation or family death) is required. The Thielen Student Health Center does not provide documentation for excuses to miss exams. Make sure you do not plan or take a trip that is not officially sanctioned in writing by ISU or by a branch of the military, and that causes you to miss an hour exam. Pre-booked vacation flights are not valid excuses. If the excuse is approved by Prof. Zaikina, your other two exam scores will be used to determine your missing score. *A student missing two exam scores will be asked to drop the course.*

  An early exam will be scheduled for athletes and students who are away from campus for ISU games, matches, or club trips may request alternate arrangements for taking the exam. If you have a valid reason to miss an exam, you must immediately contact instructor (not your TA). **Exam accommodation requests must be made a minimum of 4 business days prior**.

  Your graded exams will be returned during the recitation period following the exam. If you suspect an error in the grading of an exam, you must bring it to the attention of your TA *before leaving the recitation class on the day the exam was returned to you*.

  The Right-To-Privacy Act prohibits disclosure of exam scores over the phone or by e-mail.

- **TopHat Questions:** will be given during class and will count for credit starting on the first day of class, Tuesday, August 23rd. TopHat questions are worth 10% toward your

course grade. Each question counts as 1 point (0.25 for correctness + 0.75 for participation). To receive full credit at the end of the semester you must have a cumulative score of 75% or higher. For example, if you obtain 75% you will receive 10% toward your course grade, if you obtain 60% you will receive 8% toward your course grade, etc. The cumulative TopHat score exceeding 75% may result in bonus points. TopHat scores will be uploaded on the Canvas gradebook only at the end of the semester, after last lecture. You may monitor your performance directly on the TopHat app.

- **OWLv2 Mastery Problems:** Login to the OWLv2 homework system through the Canvas CHEM 178-A course page (Modules). There will be 15 OWLv2 assignments throughout the semester. Each assignment is open for about 1-2 weeks; late OWLv2 assignments will receive a 10% penalty if completed after the posted due date, but before the date of the respective exam. ***See the Canvas course page for due dates***. These mastery problems are designed to help you learn a topic before moving on to the next one. There are no exceptions to this policy and no extensions or make-ups for OWL HW assignments will be granted.
- **Recitation Worksheets:** During each recitation period, every student will complete a one-page worksheet on the week's material. These may be completed with a partner or alone. The best 12 worksheet scores will count toward the final grade. No make-up of any missed worksheet is allowed.
- **Final Exam:** A comprehensive exam is scheduled for Wednesday, December 14th, 9:45 - 11:45 am. No final exams will be administered *earlier* than this date – please arrange end-of-semester travel plans accordingly. The final will consist of multiple-choice questions and writing balanced chemical equations from a written description.

  A final exam review session will be held the day/evening prior to the exam date; the exact date, time, and location will be announced in due course.

Alternative final exam times will only be scheduled for students with a conflicting final exam time or those with three or more finals scheduled for the same day. **There will be no exceptions.** The ISU final examinations policy will be followed absolutely: https://www.registrar.iastate.edu/students/exams

Resources and academic support: The department of chemistry provides help to all general chemistry students in the Martha E. Russell Chemistry Help Center in 1761 Gilman Hall. It is open MTWR from 9 am to 5 pm and Fridays from 9 am to 1 pm. The Help Center is staffed by general chemistry teaching assistants. Solutions manuals and general chemistry textbooks, study guides, and workbooks are available. Resources in the Help Center may not be removed from the room. Students are encouraged to form study groups and meet on a regular basis.
https://www.chem.iastate.edu/chemistry-help-room

Supplemental Instruction (SI): SI will be offered to help students in Chem 178;

Supplemental Instruction is a free, voluntary program that offers students three study sessions each week for traditionally difficult courses. The SI sessions are facilitated by an SI Leader. Studies have shown that this group learning style has great benefits for students who regularly attend, with an average of nearly a full letter grade increase for students attending one session each week.

Students should attend SI sessions to ask questions about course content and to develop learning/study strategies. Students who participate in SI sessions typically earn higher final course grades and exam grades than students who do not participate in SI. SI attendance is voluntary, and it is not a substitute for class attendance. For information about the days, times, and locations for SI sessions, refer to the SI website: www.si.iastate.edu SI will be delivered in person for the Fall 2022 semester. The SI sessions will be held on set days/times each week. You can watch a brief video created by SI Program staff to learn more about SI delivery: https://youtu.be/FB_5MK17kw8

Important Course Policies

Late Assignments and Deadline Extensions: The weekly lecture/topic review questions and OWL mastery problems are designed to help you master a topic and keep you on task as the semester progresses. It is very important that you complete the work by the scheduled deadline. Late submissions of OWL Mastery Problems are accepted with 10% penalty (if submitted before the corresponding date of Exam (see Assessments). Therefore, please contact the instructor/head TA should you have had extraordinary circumstances that prevented you from completing the assignment no later than 10:00 AM the day after the deadline.

Deadlines are firm and communication is important. If you know you will be unable to complete an assignment because of illness or another emergency, contact the instructor/heat TA in advance. If the illness or other emergency happens on the day the assignment is due, you must contact the instructor/head TA ASAP and by 10:00 AM the day after the deadline.

Cheating and Plagiarism: please review the information under **Academic Misconduct.**

Expected In-Class and On-line Behaviors

- All communication within the course should adhere to university standards of Netiquette at ISU. Specifically, communication should be scholarly, respectful, professional, and polite.
- You are expected to follow ISU's Principles of Community.
- You are encouraged to disagree with other students, but such disagreements need to be based upon facts and documentation. It is the instructor's goal to promote an atmosphere of mutual respect during our interactions. Please contact the instructor or head TA if you have suggestions for improving the interactions in this course.
- Professional and respectful tone and civility are expected when communicating with fellow learners and the instructor at all times.
- Video interactions must reflect a respectful tone in verbal communications and body language.

Expectations for On-Line Assignments and Recitation Worksheets

- You may work with others, but completing assignments independently will enhance your learning.
- You may use the CHEM 178 Canvas course content and your notes.

Expectations for all Examinations

- You must work independently.

- You will need a scientific calculator with basic functions including logarithms and exponential functions. Graphing calculators are not allowed for exams. A small number of basic calculators will be available to borrow during the hour exams and final (you will need to leave your student ID to borrow one).

Scores

OWLv2 Mastery Problems are automatically graded either directly on Canvas or in the Cengage OWLv2 platform. Recitation Worksheets will be graded by TAs and scores should be posted within 1 week of the due date. Hour exams will be graded by TAs and scores should be posted within 24 hours of the exam date. The exams will be returned during the immediately following recitation period. TopHat questions score will be uploaded on the Canvas gradebook only at the end of the semester, after last lecture. You may monitor your performance directly on the TopHat app.

If you believe that an error has occurred, you must inform the instructor immediately, and by one week after the assignment/exam due date. It is each student's responsibility to check their grades on Canvas.

Final Grades

Final grades are based solely on graded work and are NOT negotiable. No single student will be offered make-up assignments or extra credit points. By completing all OWLv2 Mastery Problems before their respective due dates, there are opportunities to earn bonus points.

Course Evaluations

Students will be asked to evaluate their Tas and Instructor (Prof. Zaikina) at mid-term by completing a questionnaire on Canvas. At the end of the semester, similar course evaluations will be conducted. Student comments become a part of personal files and are used for course improvement, so constructive comments are appreciated. There will be one bonus point toward a student's total score for filling out each evaluation (3 pts maximum).

Grading Policies regarding Incomplete Grades:

https://catalog.iastate.edu/academiclife/gradingsystem/#gradepoliciestext

ISU Academic Calendar: https://www.registrar.iastate.edu/calendar/

Additional Learner-Centered Information

- Take time to familiarize yourself with the course structure and layout in the Canvas CHEM 178 site.
- Read all essential documents – course syllabus and course schedule.
- Identify and establish the communication channels provided – Canvas Discussions and e-mail
- Confirm technical requirements – so that you can access all the materials
- Be patient and respectful of the response time indicated.
- Plan your time – have a personal schedule, establish and maintain a consistent study time, and stay organized. DO NOT WAIT UNTIL THE LAST MOMENT TO WORK ON ANY ASSIGNMENT.
- Make connections with fellow classmates, your TA, the Head TA, and the instructor.
- Ask questions whenever things are unclear or confusing.
- Regularly check grades and announcements on the Canvas course webpage.

Tentative Schedule of Topics / Meetings

Week	Date	Topics / Activity	Text Reading	OWLv2	Videos (Modules)
1	Aug 23	Introduction; Kinetics	12.1	OWL 01	Mod 1: V1-V2
	Aug 25	Kinetics	12.2, 3		Mod 1: V3-V4
	Aug 26	Recitation (Worksheet #1)			
2	Aug 30	Kinetics	12.4, 6	OWL 02	Mod 1: V5-V6
	Sep 1	Kinetics	12.5, 7		Mod 1: V7-V8
	Sep 2	Recitation (Worksheet #2)			
3	Sep 6	Equilibria	13.1-4	OWL 03	Mod 2: V1-V3
	Sep 8	Equilibria	13.5		Mod 2: V3-V4
	Sep 9	Recitation (Worksheet #3)			
4	Sep 13	Equilibria	13.5, 7	OWL 04	Mod 2: V5-V6
	Sep 15	Equilibria	13.5, 6		Mod 2: V7
	Sep 16	Recitation (Worksheet #4)			
5	Sep 20	Hour Exam I (Kinetics, Equilibria)			
	Sep 20	Acids and Bases	14.1-3, 6	OWL 05	Mod 3: V1-V3
	Sep 22	Acids and Bases	14.1-3, 6		Mod 3: V1-V3
	Sep 23	Recitation (Worksheet #5)			
6	Sep 27	Acids and Bases	14.1-3, 6, 7	OWL 06	Mod 3: V4-V6
	Sep 29	Acids and Bases	14.1-3, 6, 7		Mod 3: V6-V7
	Sep 30	Recitation (Worksheet #6)			
7	Oct 4	Acids and Bases	14.9-11	OWL 07	Mod 3: V8-V9
	Oct 6	Aqueous Equilibria	15.1, 2, 4		Mod 4: V1-V2
	Oct 7	Recitation (worksheet #7)			
8	Oct 11	Aqueous Equilibria	15.2, 3	OWL 08 OWL 09	Mod 4: V2-V3
	Oct 13	Aqueous Equilibria	11.1-3; 16.1		Mod 4: V4-V5
	Oct 14	Recitation (Worksheet #8)			
9	Oct 18	Hour Exam II (Equilibria, Acids and Bases, Aqueous Equilibria)			
	Oct 18	Electrochemistry	4.9, 10	OWL 10	Mod 5: V1-V2
	Oct 20	Electrochemistry	4.9, 10		Mod 5: V1-V2
	Oct 21	Recitation (Worksheet #9)			
10	Oct 25	Electrochemistry	18.1-3	OWL 11	Mod 5: V3-V4
	Oct 27	Electrochemistry	18.1, 2, 5		Mod 5: V5
	Oct 28	Recitation (Worksheet #10)			
11	Nov 1	Electrochemistry	18.7, 8	OWL 12	Mod 5: V6
	Nov 3	Thermodynamics	17.1-3		Mod 6: V1-V2
	Nov 4	Recitation (Worksheet #11)			

Week	Date	Topics / Activity	Text Reading	OWLv2	Videos (Modules)
12	Nov 8	Thermodynamics	17.5, 6		Mod 6: V3-V4
	Nov 10	Thermodynamics	17.4, 7	OWL 13	Mod 6: V5-V6
	Nov 11	Recitation (Worksheet #12)			
13	Nov 15	Thermodynamics	17.8-10; 18.3		Mod 6: V7-V8
	Nov 17	Nuclear Chemistry	19.1, 3, 4	OWL 14	Mod 7: V1-V3
	Nov 18	Recitation (Worksheet #13)			
Nov 21-25		Thanksgiving Break			
14	Nov 29	Hour Exam III (Electrochemistry, Thermodynamics)			
	Nov 29	Nuclear Chemistry	19.1, 5, 6		Mod 7: V3-V4
	Dec 1	Nuclear Chemistry	19.1, 5, 6		
	Dec 2	Recitation (Worksheet #14)		OWL 15	
15	Dec 5-6	Nuclear Chemistry	19.2		Mod 7: V5
	Dec 7-8	Course Summary			
	Dec 9	Recitation (Worksheet #15)			
	Dec 14	Final Exam (Comprehensive) 9:45 - 11:45 AM			

Syllabus Statements

Free Expression: Iowa State University supports and upholds the First Amendment protection of freedom of speech and the principle of academic freedom in order to foster a learning environment where open inquiry and the vigorous debate of a diversity of ideas are encouraged. Students will not be penalized for the content or viewpoints of their speech as long as student expression in a class context is germane to the subject matter of the class and conveyed in an appropriate manner.

Public Health: If you are not feeling well, you should stay home and focus on your health. Should you miss class due to illness, it is your responsibility to work with your instructor to arrange for accommodations and to make up coursework, as consistent with the instructor's attendance policy.

You may choose to wear a face mask and/or receive the COVID-19 vaccine and boosters, as well as other vaccines such as influenza, but those options are not required. Thielen Student Health Center will continue to provide COVID-19 vaccinations free-of-charge to students. The university will continue to offer free masks and COVID-19 test kits during the fall 2022 semester. Other wellbeing resources for students are available at: https://www.cyclonehealth.iastate.edu/wellbeing-resources/

Public health information for the campus community continues to be available on Iowa State's public health website. All public health questions should be directed to publichealthteam@iastate.edu.

Academic Dishonesty: The class will follow Iowa State University's policy on academic misconduct (5.1 in the Student Code of Conduct). Students are responsible for adhering to university policy and the expectations in the course syllabus and on coursework and exams, and for following directions given by faculty, instructors, and Testing Center regulations related to coursework, assessments, and exams. Anyone suspected of academic misconduct will be reported to the Office of Student Conduct in the Dean of Students Office. Information about academic integrity and the value of completing academic work honestly can be found in the Iowa State University Academic Integrity Tutorial.

Accessibility Statement: Iowa State University is committed to advancing equity, access, and inclusion for students with disabilities. Promoting these values entails providing reasonable accommodations where barriers exist to students' full participation in higher education. Students in need of accommodations or who experience accessibility-related barriers to learning should work with Student Accessibility Services (SAS) to identify resources and support available to them. Staff at SAS collaborate with students and campus partners to coordinate accommodations and to further the academic excellence of students with disabilities. Information about SAS is available online at www.sas.dso.iastate.edu, by email at accessibility@iastate.edu, or by phone at 515-294-7220.

Discrimination and Harassment: Iowa State University does not discriminate on the basis of race, color, age, ethnicity, religion, national origin, pregnancy, sexual orientation, gender identity, genetic information, sex, marital status, disability, or status as a U.S. Veteran. Inquiries regarding non-discrimination policies may be directed to Office of Equal Opportunity, 3410 Beardshear Hall, 515 Morrill Road, Ames, Iowa 50011, Tel. 515-294-7612, Hotline 515-294-1222, email eooffice@iastate.edu

Prep Week

This class follows the Iowa State University Prep Week policy as noted in section 10.6.4 of the Faculty Handbook.

Religious Accommodation: Iowa State University welcomes diversity of religious beliefs and practices, recognizing the contributions differing experiences and viewpoints can bring to the community. There may be times when an academic requirement conflicts with religious observances and practices. If that happens, students may request the reasonable accommodation for religious practices. In all cases, you must put your request in writing. The instructor will review the situation in an effort to provide a reasonable accommodation when possible to do so without fundamentally altering a course. For students, you should first discuss the conflict and your requested accommodation with your professor at the earliest possible time. You or your instructor may also seek assistance from the Dean of Students Office at 515-294-1020 or the Office of Equal Opportunity at 515-294-7612.

Contact Information for Academic Issues: If you are experiencing, or have experienced, a problem with any of the above statements, email academicissues@iastate.edu