

Chem 178: General Chemistry II

Spring Semester 2021

ONLINE

Supplemental Live Webex Session: Wed. 1:10–2:00 pm

Instructor

Alexander Gundlach-Graham

Office: Hach 3101C

Email: chem178aq@iastate.edu

Regular Office Hours* (via Webex): Mon. 2:00–3:00 pm, Wed. 2:00-3:00 pm

**Office Hours by appointment may be setup via email; each student requesting a meeting should do so at least 24 hours in advance and provide two scheduling options.*

Head Teaching Assistant (TA)

Name: Richard Lancaster

Email: chem178aq@iastate.edu

Regular Office Hours (via Webex): TBD

Contacting the Instructor/Head TA

We encourage you to contact the Instructor or Head TA whenever you need help with the course material or you have other questions or concerns related to the course. Response time is approximately 24 hours.

- Use the **Help Forum** on the Canvas course page (access through the “Contact” button on the Home 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.)

Tech Support Email: elotech@iastate.edu (Colleges of Engineering and LAS Online Learning (ELO)). Please go to Canvas Help for more information on finding help with Canvas.

Course Description

(3-0) Cr. 3. F.S.SS.

Prerequisites: CHEM 177, CHEM 177L, or CHEM 167

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

Course Format

- Chem 178 is **online only**. All course materials and all assessments will be presented, accessed, and/or delivered through Canvas.
- The course is composed of 7 modules: chemical kinetics, chemical equilibrium, acid/base reactions, electrochemistry, aqueous equilibrium, thermodynamics, and nuclear chemistry. Each of these modules will be covered in two weeks and assignments associated with each module are detailed on Canvas. Students should complete learning modules at the defined pace throughout the semester; modules will be made accessible on the Friday before the module begins. We advise students to set aside regular “class hours” each week to watch video-lectures, complete assigned readings, and work through assignments.
- An online exam must be completed by each student on the Monday* following completion of each module. (*The exam for Module 7 will be completed on Friday, April 30.)

- Assistance is just an email or a Webex conversation away. We are happy to help. Both the instructor and head TA will hold on-line student hours/Q&A sessions via Webex. Teaching Assistants will hold meetings on Fridays via Webex. A schedule of the available supplemental meeting hours is detailed on Canvas.
- **We encourage students to attend the help sessions arranged by the instructor and TAs!** This is one of the most effective ways to get to answers to any questions you have about the material covered in the class, and will also help your performance on assessments.

Learning Objectives and Outcomes*

By completing this course, students will be able to:

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

*More detailed, module-specific learning objectives are provided on Canvas.

Required Technology

- A reliable Internet connection
- Access to a computer with a microphone and audio capability
- Access to Canvas
- A scientific calculator with basic functions including logarithms and exponential functions.

Required Digital Course Content (Includes E-Textbook)*

- **Title:** OWLv2 with MindTap Reader for Zumdahl/Zumdahl/DeCoste's, *Chemistry, Tenth Edition*
- **Author:** Steven S. Zumdahl; Susan A. Zumdahl; Donald J. DeCoste
- **Publisher:** Cengage
- **ISBN:** 978-1-305-95757-2
- **Price to Student:** \$41.20
- **Duration:** 180 days

* This course is enrolled in the **ISU Immediate Access Program**, which means that students will automatically receive access to all required digital course materials the first day of class. Students will be charged on their U-bill for the digital content. The billing description on your U-bill will appear as CHEM 178 IMMED ACCESS 7572. The digital content is required to complete online homework assignments and includes access to the eBook. Students who drop the course within the first 10 days of class will receive a refund on their U-bill. Students do not have to notify the bookstore if they drop the course; this is an automated process.

Students may choose to opt out of ISU Immediate Access without dropping the course; however, they must then find another way to acquire the required digital content in order to complete homework assignments. Students have within the first 10 days of class to opt out and receive a refund to their U-bill, i.e. by Feb. 5, 2021. To opt out during the first 10 days of class, navigate to the "RedShelf Course Materials" tool on the Canvas Course navigation menu. After agreeing to terms of use, click on "View Course Materials", and then on the next page, click on the gray opt out bar on the bottom of the page. More details about immediate access materials can be found

on the ISU bookstore page: <https://www.isubookstore.com/immediate-access>. For further questions about Immediate Access, please email immediateaccess@iastate.edu.

Access to 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. Navigate to the **E-Textbook and OWL HW System (Zumdahl Chemistry 10e OWLv2) Information Module** and select a link that reads "CHEM 178 E-book/HW."
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 ebook is included and accessed within the OWLv2 Courseware only. There is no ebook accessible through the RedShelf Course Materials tool.

Course Resources on Canvas

This course is comprised of 7 Modules, each of which spans two weeks. For each Module, the following resources are available for you to examine, study, and review:

- **Video Lecture-Presentations:** Topic videos lasting approximately 15 minutes (some shorter; some longer). Each video used Powerpoint and begins with a brief summary of learning goals for the video, then provides some background material, and includes problem solving - both word problems and multiple-choice questions - to prepare you for assessments. You should treat these video lecture presentations as akin to in-class lectures: for best learning, actively follow presented content by **taking notes** and working through problems on your own as they are presented.
- **Video Presentation Slides:** in PDF and PPS format. You can run through each presentation on your own (at your own speed) using the PPS format slides.

Getting Started with Canvas

Be sure to have an ISU NetID. If you do not, please visit Passwords and Accounts (<https://www.it.iastate.edu/services/accounts>)

Login to [Canvas](#) with your ISU NetID and password and look for your course for this semester.

Canvas Help

General help with Canvas can be found under the Help link in the global navigation menu on the left side of your Canvas page. You will find:

- Canvas Live Chat – 24/7 live chat with Canvas specialists
- Canvas@ISU, Student Resources (<https://www.celt.iastate.edu/canvas-isu/>)
- Canvas Community-Online support forum for canvas users.

Basic Troubleshooting (if Canvas is not working)

- If your username/password is not working? The login information (username and password) for Canvas is the same as for your ISU email account. For help with Username and Password, please visit [University Accounts](#) or contact Solution Center at 515-294-4000 or solution@iastate.edu.
- If you get an error message, check for Browser and Java Issues on your computer.
- If you are unable to access course content or activities (e.g., Tests, Discussions, Assignments, etc.), contact your instructor.

Assignments and Grading

A detailed outline of all graded assignments is provided on the Home page of the Canvas Course Page under the “Course Summary heading.” A detailed outline of all assignments is also provided in the “Course Schedule” document provided on the Canvas home page, accessible via the “Syllabus and Schedule” button.

Assignment Types:

- Lecture-Comprehension Quizzes (10 pts per video set).

There is a multiple-choice “quiz” on Canvas associated with each video-lecture presentation. These quizzes must be completed by 6:00 pm on the second Friday* of each module. The lecture-comprehension questions are meant to help guide students in identifying key concepts from the video lectures. **As good practice, try to take the lecture-comprehension quiz immediately after watching the lecture material using the notes you took during the lecture.** You will get two attempts to answer each question. Use this as a learning exercise: for questions that you missed, go back to the relevant sections of the lecture videos, review the presentation, and update your notes.

*For week #14 (Module 7) the lecture-comprehension quiz is due by 6:00 pm on Wednesday.

- Homework (HW) Problems (10 pts per assignment).

There is a homework assignment for each week, i.e. 14 assignments in total. All HW assignments must be completed in the OWLv2 homework system, which can be accessed through the Canvas CHEM 178 course page. HW assignments are due on Fridays by 6:00 p.m.* *Homework is designed to help you master a topic before moving on to the next topic; thus, you should complete each HW by the scheduled deadline.* There are no exceptions to this policy and no extensions or make-ups for OWL HW assignments will be granted.

*HW #2 of Module 7 is due on Wed. April 28 at 6:00 pm.

- Weekly Worksheets (10 pts for each worksheet; two lowest scores dropped).

In addition to online homework assignments, a weekly worksheet is due on each Friday of the semester by 6:00 p.m.* The completed worksheet must be submitted to Canvas as a PDF. The weekly worksheet will be made available each week on Wednesday. After 6:00 p.m. on each Friday, an answer key for the worksheet problems will be made available for students' preparations for upcoming module exams. Students may work with a study partner, but each student must submit his/her/their own worksheet. Any questions that you have about worksheets are also excellent questions to ask during instructor or TA help sessions, and you are encouraged to do so.

*NOTE: For Week #14, there will be no weekly worksheet.)

**Dropped worksheet scores may be used for extra credit.

- Module Exams (35 pts for each exam).

Module Exams (for Modules 1-6) will be available online from 10:00 a.m. – 2:00 pm on the Monday *immediately following the completion of a module* - see Schedule on Canvas. For Module 7, the exam will be available on Friday, April 30 from 10:00 a.m. – 2:00 pm. Each exam is multiple-choice. Once you begin a Module Exam, you have 1 hour (60 minutes) to complete it. You must work independently. There are no make-up exams. If you have a

valid, serious reason to miss an exam, you need to immediately contact the instructor. *You will be asked to drop the course if you miss more than two Module exams.*

- Final Exam (65 pts).

The final exam will be open during the assigned finals examination period for Chem178 on May 6th from 12:00–2:00 pm. The exam will be administered on Canvas. Once you begin the final exam, you have 1 hour (60 minutes) to complete it.

Grade Distribution

Assessments	Total Points	Percent Contribution
Video Questions	140 pts	20%
Textbook HW Assignments (OWL)	140 pts	20%
Weekly Worksheets	110 pts	16%
7 Module Exams (30 pts each)	245 pts	35%
Final Exam	65 pts	9%
Total	700 pts	

Grading Scale

Letter Grade	% Range
"A"	90-100
"B"	80-90
"C"	70-80
"D"	60-70
"F"	0-60

Course Policies

Late Assignments and Exams

- Homework assignments and lecture-comprehension quizzes are designed to help you master a topic as we go along. It is very important that you complete the work by the scheduled deadlines.
- Late submissions for HW assignments are accepted on OWL with 10% penalty until the Monday following the assignments due date.
- Missing the deadline to submit a weekly worksheet will result in a score of zero on that worksheet.
- Missing the window to take the exam will result in an automatic score of zero. If you have extraordinary circumstances that prevent you from completing the exam, please contact the instructor/head TA as soon as possible. For scheduling conflicts with the Exam periods, you must contact the instructor/TA **one week in advance** to arrange an alternative.
- Deadlines are firm, but communication is also important: if you know you will be unable to complete an assignment because of illness or another emergency, contact your instructor in advance. If the illness or other emergency happens on the day the assignment is due, you must contact the instructor ASAP and by 10:00 AM the day after the deadline.

Cheating and Plagiarism

Please review the information under Academic Misconduct (see below).

Expected Online 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.
- Use correct spelling and grammar in all written communications.

Expectations for assignments and examinations

- **You must work independently.**
- **You are permitted to use the following authorized resources to complete any assessment:**
 - Scientific or graphing calculator, Excel (for calculations)
 - Paper and pens/pencils (any work on scratch paper will not be graded)
 - Your course notes, HW assignments, Video questions, Worksheets
 - CHEM 178 Canvas course content
- **You are NOT permitted to do the following:**
 - You may NOT communicate with anyone else about the Module exams.

- You may NOT have someone else help you solve the Module exam questions.
- You may NOT post questions about the assessment to the Help Forum on Canvas.
- You may NOT post and/or consult unauthorized aids, including paid-for subscriptions to Chegg, Scribd, or tutoring services.
- You may NOT search the questions in a search engine (e.g. Google).

Scores

- Lecture-comprehension quizzes, Homework assignments via OWLv2, and Module exams are automatically graded
 - Worksheets will be graded by TAs and scores should be posted within 1 week of the due date.
- * HW scores are synched to Canvas automatically. If you believe that an error occurred, you must inform the instructor immediately (within one week after the assignment/exam due date). It is each student's responsibility to check his/her/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 weekly worksheets, there is an opportunity to receive bonus points.

Grading Policies regarding Incomplete Marks

<https://catalog.iastate.edu/academiclife/gradingsystem/#grade policiestext>

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 learning management system being used such as Canvas or other technology used in the course.
- **Read** the essential documents – course syllabus and course schedule.
- **Identify and establish** the **communication channels** provided – Help Forums/online meetings/Email/groups discussion forums
- **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 and the instructor.
- **Ask Questions** – Don't wait. Ask questions regarding expectations/content/policies. Follow the mentioned protocols for the course.
- Become familiar with [the way the To Do list works in Canvas](#) to help you stay organized.

University Policies

Students in this course are responsible for being familiar with the University's student rules and policies. Visit the ISU Policy Library website (<http://www.policy.iastate.edu/>).

Academic Misconduct

All acts of dishonesty in any work for this course constitute academic misconduct. Online courses are no exception. The Student Disciplinary Regulations (<http://policy.iastate.edu/policy/SDR>) will be followed in the event of academic misconduct. Depending on the act, a student could receive an F grade on the test/assignment, an F grade for the course, or be suspended or expelled from the University. Academic misconduct includes all acts of dishonesty in any academically related matter and any knowing attempt to help another student commit an act of academic dishonesty. See more information at [Academic/Research Misconduct for Students](#). Academic dishonesty includes, but is not limited to each of the following acts when performed in any type of academic or academically related matter, exercise, or activity.

Plagiarism. Plagiarism is the act of representing directly or indirectly another person's work as your own. It can involve presenting someone's speech, wholly or partially, as your own; quoting without acknowledging the true source of the quoted material; copying and handing in another person's work with your name on it; and similar infractions. Even indirect quotations, paraphrasing, etc., can be considered plagiarism unless sources are properly cited. Plagiarism will not be tolerated, and students could receive an F grade on the test/assignment or an F grade for the course. The Iowa State University policy for academic misconduct can be found in the Student Disciplinary Regulations.

Obtaining Unauthorized Information. Information is obtained dishonestly, for example, by copying graded homework assignments from another student, by working with another student on a take-home test or homework when not specifically permitted to do so by the instructor, or by looking at your notes or other written work during an examination when not specifically permitted to do so.

Tendering of Information. Students may not give or sell their work to another person who plans to submit it as his or her own work. This includes giving their work to another student to be copied, giving someone answer(s) to exam question(s) during an exam, taking an exam and discussing its contents with students who will be taking the same exam, or giving or selling a term paper to another student.

Misrepresentation. Students misrepresent their work by handing in the work of someone else. The following are examples: purchasing a paper from a term paper service; reproducing another person's paper (even with modifications) and submitting it as their own; having another student do their computer program or having someone else take their exam.

Bribery. Offering money or any item or service to a faculty member or any other person to gain academic advantage for yourself or another is dishonest.

Accommodations and Accessibility Statement

Iowa State University is committed to assuring that all educational activities are free from discrimination and harassment based on disability status. Students requesting accommodations for a documented disability are required to work directly with staff in Student Accessibility Services (SAS) to establish eligibility and learn about related processes before accommodations will be identified. After eligibility is established, SAS staff will create and issue a Notification Letter for each course listing approved reasonable accommodations. This document will be made available to the student and instructor either electronically or in hard-copy every semester. Students and instructors are encouraged to review contents of the Notification Letters

as early in the semester as possible to identify a specific, timely plan to deliver/receive the indicated accommodations. Reasonable accommodations are not retroactive in nature and are not intended to be an unfair advantage. Additional information or assistance is available online at <http://www.sas.dso.iastate.edu>, by contacting SAS staff by email at accessibility@iastate.edu, or by calling 515-294-7220. Student Accessibility Services is a unit in the Dean of Students Office located at 1076 Student Services Building.

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 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, website (<http://dso.iastate.edu>) or via phone 515-294-1020 or the Office of Equal Opportunity, website (<https://www.eoc.iastate.edu>) or via phone 515-294-7612.

Free Expression

Iowa State University supports and upholds the First Amendment protection of freedom of speech (<https://bit.ly/isu-freedomspeech>) and the principle of academic freedom (<https://bit.ly/regents-academicfreedom>) 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.

Library

To login from off-campus: When you are off ISU campus and would like to access one of ISU's subscription databases or licensed full text resources (such as journal articles, e-books, and journals) from the [Library website](#), you will be prompted to login using the last 11 digits of your ISU University ID (9-digit University ID plus the following 2-digit Security Code) and the Library password (Borrower ID password) you set.

Even if you do not have a physical ISUCard, you do have an ISU University ID number. If you don't remember that number, you can login to [AccessPlus](#) using your social security number and verify your University ID number.

Login questions or problems? Contact Circulation Desk staff: Phone (515) 294-3961 or email CircDesk@iastate.edu

See also the Library's [Distance Learning Support](#) guide for more information on access, how to find and search helpful databases, and how to get articles and books you need sent to you.