

**CHM 116**  
**General Chemistry II**  
**Arizona State University**  
**New College of Interdisciplinary Arts and Sciences.**  
**Spring 2021**  
**Section 11439 21438**

**Instructor:** Dr. John Wang

**Class Time/Room:**

for session 11439 TTh 9:00 AM – 10:15 AM, on ZOOM: <https://asu.zoom.us/j/3932519681> ,

for session 21438 MWF 9:05 AM – 9:55 AM, on ZOOM: <https://asu.zoom.us/j/3932519681>

**Modality**

Course Name	Course Modality	Attendance Options	Instructor Presence	In-Person Opportunities (Optional for Students)
CHM 116 Lectures	ASU Remote-Only	<i>All students attend this class via Zoom synchronously, but students can join additional optional in-person activities</i>	Remote	Office hours

**Office:** CLCC217C

**Email:** [jhwang43@asu.edu](mailto:jhwang43@asu.edu)

**Phone:** (602) 543-1093

**Office Hours:** Mon. 12:30 PM–1:30 PM, Tue/Fri 4:00 pm – 5:30 pm or appointment by email if these hours do not work for you. ZOOM link for Office Hour is

<https://asu.zoom.us/j/3932519681>

The following are **RECOMMENDED**:

- **Textbook:** “Chemistry, The Central Science” by Brown, LeMay, Bursten, Murphy & Woodward, 14<sup>th</sup>

The following are **REQUIRED**:

- **Mastering Chemistry Access:** Will be needed to complete your homework assignments
- **Lab Experiments:** All experiments will be downloaded from Canvas
- **Eye Protection:** Safety glasses are **required at all times in the lab.**
- **A cheap non-programmable, non-graphing calculator** (\$5 to \$10) (must be able to do +, -, x, /, log, ln, x<sup>y</sup>). Scientific calculators will also be allowed. Cell phone calculators will not be allowed in the exams.

**Course Description**

This class is the continuation of the CHM 113 course so only students who have successfully completed CHM 113 (C or better) should be enrolled in this class. Topics covered include: reaction rates, Gibb’s free energy, acid/base chemistry, organic chemistry nomenclature, and electrochemistry (redox reactions).

There is a laboratory that accompanies the lecture. The laboratory section will give students a hands-on approach to experiment with concepts learned in lecture.

This course is designed for people who are majoring in the biological and life sciences. This class is targeted to students who plan to take a year of organic chemistry and a semester of biochemistry. Students in other majors (e.g. Education, etc.) should strongly consider easier courses to fulfill a science requirement for their degree program rather than this course.

**Read over the chapter(s) before coming to class. You may not understand all the material, however, some of it will not be totally new to you when you come to lecture. The amount of additional time you should spend learning the material should be around 3 to 4 hours per week for every hour of class time spent. Besides reading, practice problems are encouraged to acquire a better idea of the concepts involved in the class.**

### Attendance

Students are encouraged to attend class and will be held accountable for all materials presented in class. This includes any exam schedule changes and additional material not covered in the textbook.

### Prerequisite

CHM 113 (or equivalent) with a C or better.

### Canvas

This class will make use of the Canvas system. Course material will be posted on Canvas, as well as announcements and other additional materials. You will be expected to keep up-to-date with any announcements posted on Canvas.

### Additional Comments

1. Lectures may be audiotaped for personal use with the authorization of the Disability Resource Center (DRC). No videotaping is allowed.
2. Pagers and cell phones **are to be turned off in class and lab**. Personal computers are allowed. However, if the student is engaged in purposes other than taking notes (web surfing, playing games, preparing papers for other classes, etc.), the student could lose the right of using the personal computer.
3. Students cannot bring children or other family members to lecture or lab.
4. Students are expected to be competent in the use of excel, word, and to use the computer to carry out graphical analysis. Additional methods will be taught during the laboratory, but the student must know the basics of each program.
5. University policy for 100 level courses is that the course cannot be re-taken if you receive a C or better grade. If you get a D or E, you can retake the course and replace your grade. Also, you need to receive a grade of C or better in this class to continue on to CHM 116.
6. I cannot answer complicated homework/material questions by email, as it is difficult to type equations into emails and the majority of questions can be better explained in person. If you have any complicated question, please see me after class or during my office hours.
7. Grades for exams and/or the final will not be given via email. It is against University policy to do so.

8. An “incomplete” grade can only be given to people who are receiving a passing grade (C or better) at the time of the student’s departure from the class. It cannot be used to withdraw from the class after the deadline.
9. Students are required to adhere to the standards of academic integrity as set forth by Arizona State University. A detailed list of the standards of academic integrity can be found at: [http://www.asu.edu/studentaffairs/studentlife/judicial/academic\\_integrity.htm](http://www.asu.edu/studentaffairs/studentlife/judicial/academic_integrity.htm). (see the next to last page for details)
10. Class materials given in class are for use by the students in the class. Do not distribute materials (notes, exams etc.) to outside groups or organizations without written approval by the instructor.
11. Homework, tutorials, and additional problems will be accessed through Mastering Chemistry. The Course ID is: **wang86049**
12. A practice question for each chapter will be given. Practice those questions and get ready for the exams.
13. If you need additional practice, at the end of each chapter you will be able to find several problems for that specific chapter. Also, the problem numbers written with red ink will include the answers at the end of the book.
14. If any student is interested in having an Honors Contract, please send me an email to give you all the information, including the potential meeting days.

## **GRADING POLICY**

(Out of 100%)

1. **Examinations** (45 %)—Three, 150-point exams will be given. You are expected to be present for all of them, so plan accordingly. If you miss an exam, see me as soon as possible. If the absence is excusable (illness, death in the family, jury duty.) your final exam grade will be used as substitute for the missing exam grade. For an absence to be excusable, it must be documented by an independent source (doctor’s note, jury duty summons, etc.). Family members or friends are not considered independent sources; also **travel arrangements are not a valid excuse, so plan accordingly**. Until such written documentation is provided, the score for that exam will be zero. **No "make-up" exams will be given, for any reason.** All exams are multiple-choice exams. Missing two or more exams for any reason automatically results in an “E” grade for the class. All the exams are on Canvas. No lockdown browser nor camera are required.
2. **Laboratory Experiments** (25 %) See Canvas Laboratory Course for details. These are normally easy points to obtain. Always write your prelab and ask questions about the experiment and post lab section.
3. **Final Examination** (15 %) -- The final exam will be a cumulative exam. **You must take the final exam to pass the course.** A study guide will be given on Canvas. Travel arrangements **are not** a valid excuse for missing the final exam, so please plan ahead! As special rule: the final exam can also substitute the lowest of your previous three exams. However, you must submit all your homework for the related chapters before 11:59 pm of the exam days to receive such opportunity!
4. **Homework** (15 %) There is a direct correlation between doing homework and doing well in this class. Homework problems are assigned through Mastering Chemistry (**Course ID: wang86049**), and you will have a week to complete the assignment AFTER completion of the chapter. **In your Mastering Chemistry account, use your 10 digits ASU**

ID number at the ID field, and your last name and first name should be exactly what it appears on Canvas. The due dates of the homework assignments will be posted in Mastering Chemistry. Homework must be turned in **ON TIME** to aspire to full points. There will be a 10% percent point subtraction for every late day the assignment takes to be completed. You will be able to see the answers after completing the homework. Also, after the due date you can redo the homeworks for additional practice.

5. **Extra-Credit** (4%) From time to time I will have unannounced in-class that will count as extra credit. Come to class, participate in the iClicker question and pay attention to receive these BONUS extra points, 2%. The problems given during the unannounced in-class activities will be similar to the problems you will encounter during your exams. The other 2% of the extra credit will be from the chapter practice questions. To get this 2% extra credit, take the chapter practice question quizzes on the Canvas before the due dates.

**Score (1000 points) = (Class exams average – 450 points) + (Final exam --150 points) + (Homework average – 150 points) + (Lab average – 250 pts) + (Extra-Credit – 40 points)**

**The following grading scale will be used:**

A+	= 97.00 to 100 %
A	= 93.00 to 96.99%
A-	= 90.00 to 92.99 %
B+	= 87.00 to 89.99 %
B	= 83.00 to 86.99 %
B-	= 80.00 to 82.99 %
C+	= 77.00 to 79.99 %
C	= 70.00 to 76.99 %
D	= 60.00 to 69.99 %
E	< 59.99 %

**No rounding's in the grading scales.**

## SCHEDULE OF READING ASSIGNMENTS, HOMEWORK (HW) AND EXAMS

<u>Lecture Topic &amp; Reading Assignment</u>	<u>HomeWork and Exams, homework are at Pearson website</u>
Course Introduction	
Chemical Kinetics, Chapter 14	Chapter 14 HW, due 02/17/2021, 11:59 pm
Chemical Equilibrium, Chapter 15	Chapter 15 HW, due 02/17/2021, 11:59 pm
	For session 11439 <b><u>EXAM #1 Thur. 02/18, CH 14-15**</u></b> For session 21438 <b><u>EXAM #1 Fri. 02/19, CH 14-15**</u></b>
Acid-Base Equilibria Chapter 16	Chapter 16 HW, due 03/24/2021, 11:59 pm
Additional Aspects of Aqueous Equilibria, Chapter 17	Chapter 17 HW, due 03/24/2021, 11:59 pm
	For session 11439 <b><u>EXAM #2 Thur. 03/25, CH16-17**</u></b> For session 21438 <b><u>EXAM #2 Frr. 03/26, CH16-17**</u></b>
Chemical Thermodynamics, Chapter 19	Chapter 19 HW, due 04/18/2021, 11:59 pm
Electrochemistry, Chapter 20	Chapter 20 HW, due 04/18/2021, 11:59 pm
Nuclear Chemistry, Chapter 21	Chapter 21 HW, due 04/18/2021, 11:59 pm
	For session 11439 <b><u>EXAM #3 Tue. 04/20, CH 19-21**</u></b> For session 21438 <b><u>EXAM #3 Mon 04/19, CH 19-21**</u></b>
Properties of Solutions, Chapter 13 (13.1-13.5)	Chapter 13 HW, due 04/30/2021, 11:59 pm
	For session 11439 <b><u>04/29 Thur. LECTURE FINAL EXAM</u></b> For session 21438 <b><u>04/30 Friday LECTURE FINAL EXAM</u></b>  The final exam will cover <b><u>ALL</u></b> the chapters covered during the semester.

### LAB FINAL, one week before the lecture final

\*\* Subject to modification if more or less material is covered

### **ANY CHANGES IN SCHEDULE WILL BE ANNOUNCED IN CLASS**

**ASU Academic Integrity** - <https://provost.asu.edu/academic-integrity>: Each student has an obligation to act with honesty and integrity, and to respect the rights of others in carrying out all academic assignments. Violations of the University Academic Integrity policy will not be ignored. Penalties include reduced or no

credit for submitted work, a failing grade in the class, a note on your official transcript that shows you were punished for cheating, suspension, expulsion and revocation of already awarded degrees. The university requires that the implementation of any of these penalties for violations of the academic integrity policy be reported to the College's Academic Integrity Officer. The Academic Integrity Policy defines the process to be used if the student wishes to appeal this action.

**ASU Student Code of Conduct** - <https://eoss.asu.edu/dos/srr/codeofconduct>: Students are expected to follow the student code of conduct, especially when communicating with your peers and instructors. Violations of the student code of conduct may result in withdrawal from the class.

**Assessments:** Please be aware that student scores on exams or other graded work may be used for assessment of program goals of degrees offered by the School of Mathematical and Natural Sciences.

**Attendance/Absence Policies:** In addition to the instructor's general policy on absences and missed work, excused absences and conditions for making up work include "Accommodation of Religious Practices" (<https://www.asu.edu/aad/manuals/acd/acd304-04.html>) and "Missed Classes Due to University-Sanctioned Activities" (<https://www.asu.edu/aad/manuals/acd/acd304-02.html>). Students must notify their instructors of these absences as early as possible in the semester.

**Copyright Infringement:** A warning to students that they must refrain from uploading to any course shell, discussion board, or website used by the course instructor or other course forum, material that is not the student's original work, unless the students first comply with all applicable copyright laws; faculty members reserve the right to delete materials on the grounds of suspected copyright infringement.

**Course/Instructor Evaluation:** The course/instructor evaluation for this course will be conducted online 7-10 days before the last official day of classes of each semester or summer session. Your response(s) to the course/instructor are anonymous and will not be returned to your instructor until after grades have been submitted. The use of a course/instructor evaluation is an important process that allows our college to (1) help faculty improve their instruction, (2) help administrators evaluate instructional quality, (3) ensure high standards of teaching, and (4) ultimately improve instruction and student learning over time. Completion of the evaluation is not required for you to pass this class and will not affect your grade, but your cooperation and participation in this process is critical. About two weeks before the class finishes, watch for an e-mail with "NCIAS Course/Instructor Evaluation" in the subject heading. The email will be sent to your official ASU e-mail address.

**Emergencies/Campus Power Outage:** In the event of a campus power outage or other event affecting the ability of the University to deliver classes, any decision to cancel classes will be announced using the ASU emergency notification system. For this reason, it is imperative that students register with the ASU emergency notification system at: <https://cfo.asu.edu/emergency-alert>. In cases in which a limited number of buildings are affected, students should check the university website and/or call the School office at (602) 543-6050.

**Evacuation Plan:** Students should be aware of the evacuation route posted on the exit door of each classroom. Students who cannot walk down stairs should notify the instructor as early in the course as

possible so the instructor can provide information regarding the location of the designated meeting area on each upper floor of the building (marked with a blue sign that states Emergency Evacuation Response Area).

***Final Exam Make-up Policy:*** The final exam schedule listed in the Schedule of Classes will be strictly followed. Exceptions to the schedule and requests for make-up examinations can be granted only by the Associate Director of the School of Mathematical and Natural Sciences for one of the following reasons: 1) religious conflict; 2) the student has more than three exams scheduled on the same day; 3) two finals are scheduled to occur at the same time. Make-up exams will NOT be given for reasons of non-refundable airline tickets, vacation plans, work schedules, weddings, family reunions, or other such activities. Students should consult the final exam schedule before making end-of-semester travel plans.

If there is a last-minute personal or medical emergency, the student may receive a grade of Incomplete and makeup the final within one calendar month. The student must provide written documentation and be passing the class at the time to receive an Incomplete. A signed “Request for Grade of Incomplete” must be submitted by the student and approved by the student’s instructor and the Associate Director of the School of Mathematical and Natural Sciences.

***Incomplete:*** A grade of incomplete will be awarded only in the event that a documented emergency or illness prevents a student who is doing acceptable work from completing a small percentage of the course requirements at the end of the semester. The guidelines in the current general ASU catalog regarding a grade of incomplete will be strictly followed. **A grade of incomplete will NOT be awarded unless there is documented evidence of extreme personal or immediate family hardship.** Changes in work hours, child-care emergencies, or other similar personal problems will not be approved as reasons for awarding incompletes. The Associate Director of the School of Mathematical and Natural Sciences must approve any incomplete grade requests.

***Policy against Threatening Behavior*** - <http://www.asu.edu/aad/manuals/ssm/ssm104-02.html>: In the classroom and out students are required to conduct themselves in a manner that promotes an environment that is safe and conducive to learning and conducting other university-related business. All incidents and allegations of violent or threatening conduct by an ASU student will be reported to the ASU Police Department (ASU PD) and the Office of the Dean of Students. Such incidents will be dealt with in accordance with the policies and procedures described in Section 104-02 of the Student Services Manual.

***Potentially Offensive Content:*** If you find any of the content of this class offensive, please bring your concerns to the instructor immediately.

***Reasonable Accommodations for Students with Disabilities:*** The Disability Resource Center (DRC) provides information and services to students with any documented disability who are attending ASU West. Individualized program strategies and recommendations are available for each student as well as current information regarding community resources. Students also may have access to specialized equipment and supportive services and should contact the instructor for accommodations that are necessary for course completion.

***Title IX:*** Is a federal law that provides that no person be excluded on the basis of sex from participation in, be denied benefits of, or be subjected to discrimination under any education program or activity. Both Title IX and university policy make clear that sexual violence and harassment based on sex is prohibited.

An individual who believes they have been subjected to sexual violence or harassed on the basis of sex can seek support, including counseling and academic support, from the university. If you or someone you know has been harassed on the basis of sex or sexually assaulted, you can find information and resources at <https://sexualviolenceprevention.asu.edu/faqs>

As mandated reporters, faculty are obligated to report any information of which they become aware regarding alleged acts of sexual discrimination, including sexual violence and dating violence. ASU Counseling Services, <https://eoss.asu.edu/counseling>, is available if you wish discuss any concerns confidentially and privately.

**Withdrawals:** Specifically, students should be aware that non-attendance will **NOT** automatically result in their being dropped from the course. Therefore, if a student does not attend class during the first week or for any extended period of time during the semester, they should not presume that they are no longer registered. ***It is the student's responsibility to be aware of their registration status.***

**Course recording:** Our aim is to create a learning environment where all feel free to contribute; thus any recording of class sessions is prohibited (with the exception of those who have a DRC-approved accommodation), or the express consent of the instructor). No one should post any verbatim accounts of class discussion or say anything that could identify a class member on social media without the express permission of the class member.

See ASU Full Calendar: <https://students.asu.edu/academic-calendar#spring2021>

Some Calendar Reminders	Session C (15 Weeks)
Classes Begin	January 11
Drop/Add Deadline	January 17
MLK day Observed - University Closed	January 18
Course Withdrawal Deadline *	March 28
Complete Session Withdrawal Deadline/Last Day of Classes *	April 23
Final Exams	April 26 – May 1
Final Grades Due	April 26 – May 3

***Any withdrawal transaction must be completed by the deadline date in accordance to the appropriate session at the registrar's office. If not, you will still be officially enrolled and you will receive a grade based on your work completed.***

\*As part of a complete session withdrawal a student must withdraw from all classes in a session. Beginning the first day of classes, undergraduate students are required to work with a Student Retention Coordinator to facilitate the withdrawal process. Please refer to <https://students.asu.edu/StudentRetention>

For additional information about ASU's withdrawal policy and the possible consequences of withdrawing from a class, contact Registration Services or your academic counselor.