COURSE SYLLABUS

CHEM 152 – General Chemistry II

Self-Paced Course - Web Based Format Option

Session begins on the 1st day of enrollment month and ends on the last day of the 6th month

Instructor Information

Instructor Name: **[faculty member]**

Contact Information: For questions, comments, or concerns please contact the Self-Paced Degree Program office:

Telephone: 563-425-5200 or 1-800-553-4150

E-mail: selfpaced@uiu.edu

Address: Upper Iowa University, PO Box 1857, Fayette, IA 52142

Course Description

Semester Credits: 4 semester credits

Catalog Course Description: This course is a continuation of the atoms first approach begun in CHEM 151. Emphasis is placed on thermochemistry, gases, solutions, thermodynamics, equilibrium, acids and bases, and kinetics.

Recommended: CHEM 151

Credit Hours: As a requirement of HLC Accreditation, all UIU courses, regardless of meeting schedule or instructional mode, follow the Federal Credit Hour Definition. As such, each credit hour earned at UIU is equivalent to a minimum of 45 hours of student engagement.

For more information on how specific instructional modes meet this requirement, please see *UIU's Policy Guidelines for Instructional Time Expectations:* UIU Policies.

Course Materials

It is the student's responsibility to make sure she/he has access to all required course materials by the start of the session.

Required Textbooks

Chemistry: Atoms First

Authors: Julia Burdge & Jason Overby

Edition: 5th

Publisher: McGraw-Hill

ISBN: 9781266259272

Recommended Resources

Materials provided by the instructor

UIU Tutor Center

- Email: tutorcenter@uiu.edu
- Phone: (563) 425-5272

UIU Academic Success

- Email: academicsuccess@uiu.edu
- Phone: (563) 425-5264

Ordering Textbooks

Purchase your textbook through the online university bookstore, BNC Virtual, or by phone at (800) 325-3252.

Course Outcomes

Upon completion of this course, students will …

- Students will be able to apply the concepts of energy, heat, temperature, specific heat, internal energy, the first law of thermodynamics, and enthalpy to systems.
- Students will be able to distinguish between real and ideal gases.
- Students will be able to apply the appropriate laws to elucidate relationships between pressure, temperature, volume, and amount of gas where appropriate.
- Students will be able to apply knowledge of intermolecular forces to explain properties of the condensed phases of matter, phase changes, and solubility.
- Students will be able to interpret phase diagrams.
- Students will be able to express solution concentration in a variety of units.
- Students will be able to apply knowledge of colligative properties to explain physical properties of solutions.
- Students will be able to apply the second law of thermodynamics to explain entropy changes in the universe.
- Students will be able to determine spontaneity and the position of equilibrium using free energy changes.
- Students will be able to write equilibrium constant expressions and apply Le Chatelier's Principle to predict the effects on equilibrium of applying various stresses to systems at equilibrium.
- Students will be able to classify acids and bases using the three major acid- base theories.
- Students will be able to predict the strength of various acids and bases based upon their structural features.
- Students will be able to calculate and interpret pH values for solutions of strong and weak acids and bases.
- Students will be able to calculate and interpret Ka and pKa values for weak acids and bases
- Students will be able to analyze acid-base equilibria via titration.

- Students will be able to write solubility product constant expressions and apply them to calculate ionic solubilities and determine when precipitation in a solution will occur.
- Students will be able to write rate laws for chemical reactions and apply them in quantitative calculations.
- Students will be able to write and balance oxidation-reduction reactions.
- Students will be able to calculate standard electrode potentials and apply them to predict the direction of spontaneous change and the position of equilibrium in an electrochemical cell.
- Students will be able to practice safety and etiquette and will apply proper measurement techniques in the laboratory.
- Students will be able to appraise the role of chemistry in their everyday lives and its impacts on the decisions they make as responsible global citizens.

Course Requirements and Grading Criteria

Course Requirements

1. Review the **entire** course syllabus before beginning the course. Be sure you understand the course procedures and objectives. Procedures do change, so please review **ALL** requirements and policies even if this is not your first course including, but not limited to, administrative withdrawal. Your course status will be affected if policies are not followed.
2. Students who develop a regular time schedule and set goals for unit completion are most successful in completing courses within a specific timeframe.
3. The feedback you receive from the instructor of your work is **critical** to your success on subsequent lessons. These comments allow you to improve and modify the next units if necessary.
4. Assignments are submitted using uiuLearn. Please complete all assignments and modules in order.
5. If the information in your syllabus is not clear or if units are not graded within a reasonable period of time, please contact your instructor using uiuLearn's email tool, if

that doesn't work contact the Self-Paced Program office. We would like the opportunity to address concerns, however, we may not know unless we hear from YOU!

6. ALWAYS keep a copy of your completed work when submitting it for grading.

Grading Criteria

Criteria	Points Percentage
Unit Assignments	15%
Unit Lab Activities plus lab exam	25%
Midterm Exam	25%
Final Exam	35%

Grading Scale

Letter Grade	Percent
A	>= 90%
A-	85% - 89.9%
B+	80% - 84.9%
B	75% - 79.9%
B-	70% - 74.9%
C+	65% - 69.9%
C	60% - 64.9%
C-	55% - 59.9%
D+	50% - 54.9%
D	45% - 49.9%
D-	40% - 44.9%
F	< 40%

Grades and Feedback

This syllabus contains all assignments necessary for completing your self-paced course. Submit your completed assignments via uiuLearn.

If you need academic assistance with the course, please feel free to contact the Self-Paced Degree Program office.

To protect the integrity of the final assessment/exam, you only receive your final grade on the exam; you do not receive any feedback on the answers to the exam questions. The answers to the questions on the exam are not shared with students. Please remember to stay academically honest.

Turnitin

Turnitin is a tool for both teachers and students to ensure academic integrity by checking the originality of submitted papers to avoid issues of plagiarism and academic dishonesty. Students should be aware that Turnitin scans submitted work and compares it to ALL other sources on file.

Extension Policy

Students will be allowed to request an extension and receive an 'X' (extension grade) at the end of their original six-month enrollment period if:

- A minimum of one assignment has been received for grading per guidelines **AND**
- All course units and exams are not completed and submitted **OR**
- A course withdrawal has not been initiated.

Note: The fee for a self-paced extension is $99 per course. The request for an extension must be submitted no earlier than one month before the end of the course and no later than a week before the end of the course.

Extension grade details

- When the extension is granted and an "X" grade is issued, the student will receive a four-month enrollment period to complete the course.
- Students do not have the option to withdraw from a course after the initial six-month enrollment period.
- An 'X' grade posted to the student's official record will be replaced with a final letter grade; however, the extension will remain on the official transcript as a notation.
- If the course is not completed by the end of the extension period, the instructor will assign a final grade (A-F) based on work completed in relation to the total

course requirements.

- If credit is not earned by the end of the extension period, students can re-enroll and repeat the entire course for credit.

Note: Students are not reported as enrolled during the extension period and are not eligible for student loan deferment. No more than one extension will be granted.

Course Schedule

Unit 1

Thermochemistry	
	Calorimetry
	Reaction Enthalpy
	Thermochemistry Assignment
	Pivot Lab: Enthalpy of Reaction

Unit 2

Gases	
	Ideal Gas Law
	Gas Mixtures
	Molecular Kinetic Theory
	Gases Assignment
	Pivot Lab: Molar Mass of Gas

Unit 3

Thermodynamics	
	First Law of Thermodynamics
	Second Law of Thermodynamics
	Gibb's Free Energy
	Spontaneity
	Thermodynamics Assignment
	Pivot Lab: Dissociation of N_2O_4

Unit 4

Kinetics & Equilibrium	
	Rate Laws
	Equilibrium
	Kinetics & Equilibrium Assignment
	Pivot Lab: Radioactive Decay and Half Life

MIDTERM EXAM

Unit 5

Acid & Base Equilibrium	
	pH Scale
	Titrations
	Acids & Bases Assignment
	Pivot Lab: Introduction to Titration Curves

Unit 6

Electrochemistry	
	Redox Reactions
	Galvanic & Electrolytic Cells
	Electrochemistry Assignment
	Pivot Lab: Redox Titrations

Unit 7

Solutions	
	Intermolecular Forces
	Colligative Properties
	Solutions Assignment
	Pivot Lab: Evaporation and Intermolecular Forces

FINAL EXAM

Course Expectations

Artificial Intelligence

For the duration of this course, the use of generative artificial intelligence (such as ChatGPT) in assignments is strictly prohibited. Assignments are opportunities for personal growth, critical thinking, and applying your acquired knowledge. Your individual effort and creativity are essential in demonstrating your understanding of the course material. Dependence on AI undermines these objectives and compromises the integrity of the learning process. I appreciate your commitment to academic honesty and dedication to upholding this course's principles by refraining from using Generative AI in your assignments.

Late Work

Late work is not accepted without obtaining an official extension ('X' grade) from the University. See the syllabus policy on Extensions for details.

Professional Writing and Speaking Guidelines

Communications in class and online should follow the Student Conduct and Discipline, Respect for the University Environment, and Code of Student Responsibility in the Student Handbook (pg. 20 and 21). Respect the opinions of others using appropriate language and communications.

University Policies

Withdrawal (W)

If a student decides to withdraw from a course before the end of an enrollment period, the student's charges, financial aid, tuition assistance, and/or veteran benefits could be affected. All students should consult with the Business Office and Financial Aid Office to understand the financial impact of withdrawing prior to initiating the withdrawal process.

Students who have registered for this course through our partnership are required to follow the withdrawal policy outlined on the partnership website. Please refer to the partnership site for official withdrawal procedures and deadlines.

Tuition adjustments are independent from academic and financial aid deadlines. Upon receiving a request for withdrawal, using the number of lessons submitted as compared to the total due, a refund of tuition is made according to the following guideline.

On or before the first day of the enrollment period* 100%

After the first lesson through 10% of the enrollment period 90%

After the first 10% through the first 25% of the enrollment period 50%

After the first 25% of the enrollment period 0%

*Enrollment is measured by the number of assignments to be submitted during a six-month period of time, as determined by the University, during which semester credits are earned toward graduation. The refund/repayments shall be calculated using the percentages noted above as determined using the number of assignments completed and the number of assignments yet to be submitted.

For example, if a student submitted 2 of 17 assignments, they completed 11.76% of the class assignments. The student would be refunded 50% of the tuition cost.

For students from Wisconsin, Maryland, Georgia, Oregon, or Arizona, state laws apply. For students enrolled through the cpacredits.com program, no refund is allowed after the first two weeks.

Students who withdraw from a course prior to submitting the first assignment, or who are administratively withdrawn for non-submission of assignments, will be charged an administrative fee of $99.

Course withdrawal may impact financial aid eligibility. A financial aid counselor is available to discuss this decision.

Upper Iowa University is required to use a pro rata schedule to determine the amount of Title IV aid the student has earned at the time of withdrawal. If financial aid funds have been released to the student because of a credit balance on the student's account at Upper Iowa University, the student may be required to repay some or all of the amount released to the student. This policy is subject to federal regulations. Contact the Financial Aid Office for details.

Withdrawing from a course in progress may result in significant student account charges. Consult with the Business Office before withdrawing. For more information on financial aid implications, go to uiu.edu/financial aid.

Administrative Withdrawal (AW)

A grade of AW (administrative withdrawal) is recorded for any course from which a student is administratively withdrawn. **At least one complete assignment/unit must be received and verified by the instructor within the first 60 days of the enrollment period or the student will be administratively withdrawn from the course.** Students who are administratively withdrawn for non-submission of assignments, will be charged an administrative fee of $99. Non-Attendance (NA): Never attended grades are not applicable to the Self-Paced Degree Program.

Academic Accommodations

It is the policy of Upper Iowa University to ensure equal access to educational and co-curricular activities to students with disabilities as mandated by the Americans with Disabilities Act Amendments Act (ADAAA) and Section 504 of the Rehabilitation Act of 1973. A student seeking accommodations should contact the Director of Student Accessibility Services as early in the session as possible. In order to receive accommodations, students are required to disclose their disability to the Director by completing an application for services that can be found on the Student Accessibility Webpage. In addition to the application packet, the student is required to submit supporting documentation. Submit these to the Student Accessibility Services Office either in person or by email/Fax. A brief interview, in-person, by phone or virtually, with the Director will confirm or deny the accommodations requested. The Student Accessibility Services Office will email accommodation letters to the appropriate professor, the student, and the student's advisor. Additionally, students should work cooperatively with their instructors throughout the session to make sure that their accommodations are appropriate and effective.

Upper Iowa University (UIU) provides closed captioning/transcriptions in acknowledgment of the Americans Disability Act, Rehabilitation Act, and various state laws. The information displayed is computer generated and not reviewed before being published. UIU makes no representations or warranties and expressly disclaims any responsibility or liability with respect to any errors or omissions in, or the accuracy, reliability, timeliness, or completeness of, any information that appears in a closed caption or transcript.

Contact the Director at (563) 425-5949, accessibility@uiu.edu or stop by the office on the 2nd floor of the Student Center, Office of Student Life, Room 229.

Emergency Directives: (Fire, Natural Disaster, Threat on campus, etc.)

In accordance with Upper Iowa University's emergency management plan, any student that requires assistance in the event of an emergency (Fire, natural disaster, threat on campus) is responsible for notifying their instructor of the need for assistance. (Evacuation, and/or indoor safety protocols) This information will be held confidential and only needed in the unlikely event that there is an emergency.

Copyright Statement

In recognition of the Copyright Law of the United States (Title 17, United States Code), Upper Iowa University reminds both faculty members and learners that a willful infringement of the law may result in disciplinary action. The University library has available materials discussing the "fair use" concept, along with criteria and guidelines for reproduction and use of copyrighted materials.

This syllabus is subject to change.

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