

Fundamental Chemistry I Fall 2022 Syllabus

Dr. Amanda L. Jonsson

Important Note: This syllabus, along with course assignments and due dates, are subject to change. It is the student's responsibility to check Canvas for corrections or updates to the syllabus. Any changes will be clearly noted in a course announcement or through email.

Course Information

Instructor Information

Instructor: Dr. Amanda Jonsson

Office: CBB 400

E-mail: ajonsson@uwsp.edu

Office Hours: Monday 2:00 – 2:50 p.m.
Tuesday 2:00 – 2:50 p.m.
Wednesday 4:00 – 4:50 p.m. *in CBB 190*
Thursday 11:00 – 11:50 a.m.
Friday 11:00 – 11:50 a.m. *in CBB 190*

Office hours are held in my office unless otherwise noted. Email me if you'd like to set up a zoom meeting to a meeting at different time.

*****The best way to contact me is by email*****

Course Description: Fundamental principles and theories of chemistry including stoichiometry, atomic and molecular structure and bonding, nuclear chemistry, thermodynamics, descriptive chemistry of nonmetals and transition metals, chemical kinetics and equilibria, introduction to organic chemistry.

Credits: 5

Prerequisite: Concurrent registration in MATH 107 or suitable math placement score. Recommended: High school chemistry or CHEM 101.

GEP Category: Natural Sciences

Expected Instructor Response Times

- I will attempt to respond to student emails within 1 business day. I cannot guarantee email response on the weekend or on holidays.
- I will attempt to grade written work within 72 hours, however longer assignments or exams may take longer.

Textbook & Course Materials

Lecture Text: Chemistry: Structures and Properties Tro, 2nd Edition, Pearson, 2018. This book is available for rental at the University Bookstore. Textbooks can be picked up in person or shipped to your home if you will be not be on campus. Please see the [University Store and Text Rental webpage](#) for more information.

Lab Manual: You will need to purchase a LabFlow account through the UWSP Bookstore or from www.labflow.com. More information is available on Canvas.

Scientific Calculator

Course Learning Outcomes

By the end of this course students should be able to:

- Explain major concepts, methods, or theories in the natural sciences to investigate the physical world.
- Interpret information, solve problems, and make decisions by applying natural science concepts, methods, and quantitative techniques.
- Describe the relevance of aspects of the natural sciences to their lives and society.

You will meet the outcomes listed above through a combination of the following activities in this course:

- Completing pre-lecture assignments.
- Attending and participating in lecture and discussion.
- Working on suggested homework problems from your textbook.
- Completing laboratory exercises.
- Completing regular quizzes and exams.
- Engaging in a semester-long project focused on compounds of your choosing.

Lecture Outline/Schedule

Important Note: Refer to the Canvas course home page for pertinent information. Activity and assignment details will be explained in detail within each week's corresponding Module. As tasks come due, they will appear in your "to do" list. If you have any questions, please contact your instructor.

Week	Date	Sections	Topic
1	W 9/7		Course intro/syllabus day
	R 9/8	E2, E5, E7	Measurements and Dimensional Analysis
	F 9/9	E3, E4	Accuracy, Precision, and Sig Figs
2	M 9/12	E6	Energy and Coulomb's Law
	W 9/14	1.1 - 1.2	Classifying Matter
	R 9/15		Discussion Activity #1
	F 9/16		Bi-Weekly Quiz #1
3	M 9/19	1.3 - 1.9	Structure of the atom
	W 9/21	1.10	Atomic and Molar mass
	R 9/22		Discussion Activity #2
	F 9/23	2.2 - 2.3	Nature of Light
4	M 9/26	2.4 - 2.5	Quantum Mechanics
	W 9/28	2.6	Shapes of Orbitals
	R 9/29		Discussion Activity #3
	F 9/30		Bi-Weekly Quiz #2
5	M 10/3	3.1 - 3.3	The Periodic Table and Electron Configurations
	W 10/5	3.4 - 3.5	Electron Configurations, the Periodic Table, and Elemental Properties
	R 10/6		Discussion Activity #4
	F 10/7	3.6 - 3.8	Periodic Properties
6	M 10/10	4.2 - 4.5	Types of Formulas
	W 10/12	4.6 - 4.8	Names and Formulas
	R 10/13		Discussion Activity #5
	F 10/14		Bi-Weekly Quiz #3
7	M 10/17	4.9 - 4.10	Formula Mass, Moles, and Composition
	W 10/19	5.2 - 5.3	Polarity and bonds and Lewis Structures
	R 10/20		Discussion Activity #6
	F 10/21	5.4 - 5.6	Resonance Structures, Formal Charge, Bond Energies & Length
8	M 10/24	5.7 - 5.9	VSEPR Theory
	W 10/26	5.10	Molecular Polarity
	R 10/27		MIDTERM REVIEW
	F 10/28		MIDTERM EXAM Ch 1 - 5

9	M 10/31	6.2 – 6.3	Valence Bond Theory
	W 11/2	7.2 – 7.4	Chemical Reactions & Stoichiometry
	R 11/3		Discussion Activity #7
	F 11/4	7.5	Limiting Reactant
10	M 11/7	8.2 – 8.3	Molarity and Solution Stoichiometry
	W 11/9	8.4 – 8.6	Solutions, Solubility, PPT Reactions, Ionic Eqns.
	R 11/10		Discussion Activity #8
	F 11/11		Bi-Weekly Quiz #4
11	M 11/14	8.7	Acid-Base Reactions
	W 11/16	8.9	Redox Reactions
	R 11/17		Discussion Activity #9
	F 11/18	9.2 – 9.5	Energy, Heat, and Work
12	M 11/21	9.6 – 9.7	Calorimetry
	W 11/23	9.8 – 9.9	Hess's Law and Bond Energies
	R 11/24	NO CLASS THANKSGIVING BREAK	
	F 11/25	NO CLASS THANKSGIVING BREAK	
13	M 11/28		Discussion Activity #10
	W 11/30		Bi-Weekly Quiz #5
	R 12/1	9.10	Enthalpy of Formation
	F 12/2	10.2	Kinetic Molecular Theory
14	M 12/5	10.3 – 10.5	Gas Laws
	W 12/7	10.7	Partial Pressure
	R 12/8	10.10	Gases in Stoichiometry
	F 12/9		Discussion Activity #11
15	M 12/12		Bi-Weekly Quiz #6
	W 12/14		FINAL EXAM REVIEW
	R 12/15		FINAL EXAM REVIEW

FINAL EXAM: Wednesday 12/21 8:00 – 10:00 a.m.

Course Structure


This class will be run as a flipped classroom. This means that students will be expected to prepare **before** attending lecture by reading relevant sections of the textbook, watch videos, or complete other activities outlined in the reading guide for that day. Class time will be spent working on problems in groups and asking questions. These activities are intentionally not graded as they are meant to be opportunities for you to practice, make mistakes, and prepare for graded assessments like exams and quizzes.

Attendance at all class sessions is expected. Participation is not mandatory, but not attending or participating in classes will make this course much

harder than it needs to be. If you miss a class session you should check Canvas for the materials you missed, try the problems, and then contact me with questions you may have about the material. Not attending or participating in classes will make this course much harder than it needs to be.

This course will heavily utilize the Canvas course management system. You will use your UWSP account to login to the course from the [Canvas Login Page](#). If you have not activated your UWSP account, please visit the [Manage Your Account](#) page to do so.

Canvas Support

Click on the  button in the global (left) navigation menu and note the options that appear:

Support Options	Explanations
Ask Your Instructor a Question Submit a question to your instructor	Use Ask Your Instructor a Question sparingly; technical questions are best reserved for Canvas personnel and help as detailed below.
Chat with Canvas Support (Student) Live Chat with Canvas Support 24x7!	Chatting with Canvas Support (Student) will initiate a <i>text chat</i> with Canvas support. Response can be qualified with severity level.
Contact Canvas Support via email Canvas support will email a response	Contacting Canvas Support via email will allow you to explain in detail or even upload a screenshot to show your particular difficulty.
Contact Canvas Support via phone Find the phone number for you institution	Calling the Canvas number will let Canvas know that you're from UWSP; phone option is available 24/7.
Search the Canvas Guides Find answers to common questions	Searching the <u>Canvas guides</u> connects you to documents that are searchable by issue. You may also opt for <u>Canvas video guides</u> .
Submit a Feature Idea I have an idea to improve Canvas!	If you have an idea for Canvas that might make instructions or navigation easier, feel free to offer your thoughts through this Submit a Feature Idea avenue.

All options are available 24/7; however, if you opt to email your instructor, she may not be available immediately.

- Self-train on Canvas through the [Self-enrolling/paced Canvas training course](#)

Grading Policies

Graded Course Activities

Click the **Assignments** link in Canvas to access assignment listing, categories and weights as applicable. Click the **Syllabus** link to see a chronological listing of assignments (right now it's relatively empty, but it will fill in and I add more due dates). Click the **Grades** link to see current grades. Overall assignments and accompanying percentages are listed below:

Description	Percent
Reading Quizzes	5%
Weekly Discussion Activities	10%
Exam Review Activities	10%
Midterm Exam	10%
Final Exam	10%
Semester-Long Project	15%
Bi-Weekly Quizzes	20%
Lab	20%
Total	100%

Reading Quizzes - After completing the reading guide, but before coming to class you will complete a short (~5 question) reading quiz in Canvas that contains multiple-choice, true/false, matching, and/or fill in the blank questions. These are designed as both a practice activity and a knowledge check, so you can see whether you are understanding the concepts from the reading. You are allowed unlimited attempts on the quizzes and your highest score will be kept. I encourage you to complete the quizzes multiple times both so you get additional practice and so you earn full credit. Reading quizzes are due at 11:59 p.m. the night before the lecture.

Discussion Activities - Each week you will complete a group activity to check your knowledge of the course material. These activities may include these types of questions: matching, fill in the blank, multiple

choice, or worked problems. These activities are due at the end of the class period.

Bi-Weekly Quizzes – Approximately every other week you will complete a quiz on the course material. These quizzes will contain a variety of question types including short answer questions and worked problems. These will occur in class and generally will be on Fridays (see tentative course schedule, look for schedule updates on Canvas).

Semester-Long Project - At the start of the semester you will choose two compounds to research over the course of the semester. Over the course of the semester you will complete a series of assignments on your compounds.

Exams - There will be two cumulative exams in this course: one mid-term and one final. There will be a time limit for these exams and you will only get one attempt. These exams are designed to evaluate your understanding of the concepts and will be held during class and the scheduled final exam period.

Exam Review Activities - Before the midterm and final exams you will complete review activities in groups. The goal of these activities is to help you review the material and prepare for the exams.

Labs - Most weeks you will complete a laboratory exercise. Pre-lab quizzes will be due at 11:59 p.m. on the Sunday **before** your scheduled lab session. Lab reports are due at 11:59 p.m on the Sunday **after** your scheduled lab session. Both the pre-lab quizzes and the lab reports will be completed and submitted using a program called LabFlow.

Participation

Students are expected to participate in all lecture and discussion sessions. If you are unable to attend a lecture session the lecture handouts will be available for you to complete on your own.

Lab make-ups are not possible. Instead, if you must miss lab for any reason, that lab report will count as one of your two dropped lab reports.

Late Work Policy

Be sure to pay close attention to deadlines – there will be no make-up

quizzes or exams. Students may request no more than three extensions on Labs and/or assignments. In all cases extensions must be requested *before the due date*.

Viewing Grades in Canvas

Points you receive for graded activities will be posted to Grades. Click on the Grades link to view your points.

Reading quizzes will be auto-graded in Canvas and you will be able to see your scores immediately. You may reattempt these activities as many times as you would like and only your highest score will be recorded.

Labs, quizzes, assignments, and exams will typically be graded within two business days of being turned in. You will have only one attempt at these activities.

Letter Grade Assignment

Final grades assigned for this course will be determined using a weighted percent of the graded course activities as noted above. Letter grades will be assigned using the grading scale below:

Letter Grade	Percentage
A	≥93%
A-	≥90%
B+	≥87%
B	≥83%
B-	≥80%
C+	≥77%
C	≥73%
C-	≥70%
D	≥63%
F	<63%

*****YOU MUST EARN A GRADE OF C- OR BETTER TO MOVE ON TO CHEM 106*****

Course Policies

Build Rapport

If you find that you have any trouble keeping up with assignments or other aspects of the course, make sure you let your instructor know as early as possible. As you will find, building rapport and effective relationships are key to becoming an effective professional. Make sure that you are proactive in informing your instructor when difficulties arise during the semester so that we can help you find a solution.

Understand When You May Drop This Course

It is the student's responsibility to understand when they need to consider unenrolling from a course. Refer to the UWSP Academic Calendar for dates and deadlines for registration. After this period, a serious and compelling reason is required to drop from the course. Serious and compelling reasons includes: (1) documented and significant change in work hours, leaving student unable to attend class, or (2) documented and severe physical/mental illness/injury to the student or student's family.

Incomplete Policy

Under emergency/special circumstances, students may petition for an incomplete grade. An incomplete will only be assigned if there are extenuating circumstances that will prevent you from completing the course. All incomplete course assignments must be completed by the end of the following semester or the incomplete will turn into an F.

Inform Your Instructor of Any Accommodations Needed

If you have a documented disability and verification from the Disability Resource Center (DRC) and wish to discuss academic accommodations, please contact your instructor as soon as possible. It is the student's responsibility to provide documentation of disability to DRC and meet with a Disability Services counselor to request special accommodation *before* classes start.

The Disability Resource Center is located in 108 Collins Classroom Center (CCC) and can be contacted via email at datctr@uwsp.edu.

Statement of Policy

UW-Stevens Point will modify academic program requirements as necessary to ensure that they do not discriminate against qualified applicants or students with disabilities. The modifications should not affect the substance of educational programs or compromise academic standards; nor should they intrude upon academic freedom. Examinations or other procedures used for evaluating students' academic achievements may be adapted. The results of such evaluation must demonstrate the student's achievement in the academic activity, rather than describe his/her disability.

If modifications are required due to a disability, please inform the instructor and contact the Disability and Assistive Technology Center in 609 ALB, or (715) 346-3365.

Commit to Integrity

As a student in this course (and at this university) you are expected to maintain high degrees of professionalism, commitment to active learning and participation in this class and also integrity in your behavior in and out of the classroom.

UWSP Academic Honesty Policy & Procedures

Student Academic Disciplinary Procedures

UWSP 14.01 Statement of principles

The board of regents, administrators, faculty, academic staff and students of the university of Wisconsin system believe that academic honesty and integrity are fundamental to the mission of higher education and of the university of Wisconsin system. The university has a responsibility to promote academic honesty and integrity and to develop procedures to deal effectively with instances of academic dishonesty. Students are responsible for the honest completion and representation of their work, for the appropriate citation of sources, and for respect of others' academic endeavors. Students who violate these standards must be confronted and must accept the consequences of their actions.

UWSP 14.03 Academic misconduct subject to disciplinary action.

(1) Academic misconduct is an act in which a student:

- (a) Seeks to claim credit for the work or efforts of another without authorization or citation;
- (b) Uses unauthorized materials or fabricated data in any academic exercise;
- (c) Forges or falsifies academic documents or records;
- (d) Intentionally impedes or damages the academic work of others;

- (e) Engages in conduct aimed at making false representation of a student's academic performance; or
- (f) Assists other students in any of these acts.

(2) Examples of academic misconduct include, but are not limited to: cheating on an examination; collaborating with others in work to be presented, contrary to the stated rules of the course; submitting a paper or assignment as one's own work when a part or all of the paper or assignment is the work of another; submitting a paper or assignment that contains ideas or research of others without appropriately identifying the sources of those ideas; stealing examinations or course materials; submitting, if contrary to the rules of a course, work previously presented in another course; tampering with the laboratory experiment or computer program of another student; knowingly and intentionally assisting another student in any of the above, including assistance in an arrangement whereby any work, classroom performance, examination or other activity is submitted or performed by a person other than the student under whose name the work is submitted or performed.

Religious Beliefs

Relief from any academic requirement due to religious beliefs will be accommodated according to UWS 22.03, with notification within the first three weeks of class.