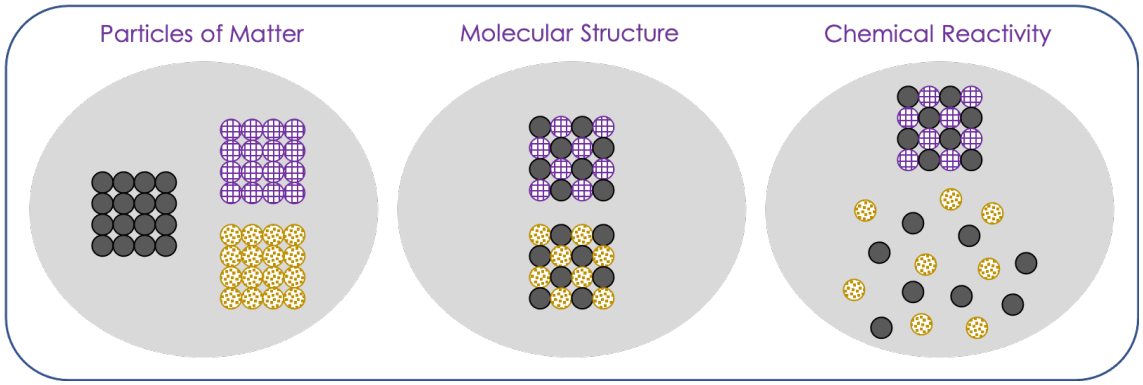
Instructor: Dr. Mondloch **Office:** TBD **Email:** jmondloc@uwsp.edu

CHEMISTRY 105:
Fundamental Chemistry

COURSE DESCRIPTION

Chemistry is the study of matter and the changes it undergoes. Chemistry is everywhere around you and plays an essential role in nearly every aspect of your daily life. In CHEM 105 you will explore some of the fundamental concepts in chemistry including: making and recording measurements, matter & atomic structure, periodic properties, molecules & compounds, chemical bonding & structure, stoichiometry, reactions in aqueous solution, thermochemistry, and gases. A common thread for all these topics is that matter is made up of particles—how those particles interact with each other dictate the properties and reactivity of mater!



LEARNING OBJECTIVES

Upon completion of Chemistry 105 a successful student will: (i) mastered fundamental principles and theories in chemistry;; (ii) develop qualitative and quantitative problem-solving skills; (iii) learn how to efficiently work in the laboratory to make, record, and interpret measurements (iv) describe the relevance of aspects of the natural sciences to their lives and society and (v) develop metacognitive skills for studying. To help you better prepare Quizzes and Exams specific learning objectives will be posted on *Canvas* as the semester progresses.

Required Materials

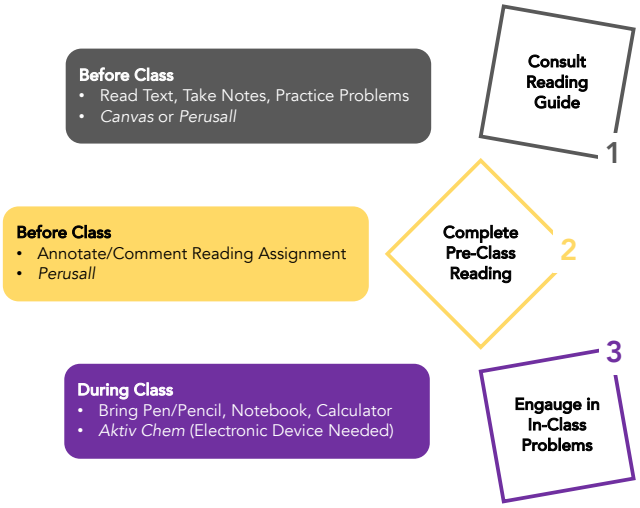
- Textbook. Flowers, P. et al. Chemistry: Atoms First 2e. Available to download for free at https://openstax.org/details/books/chemistry-atoms-first-2e Optional Textbook. Tro, N. Chemistry: Structure & Properties, 2nd Edition.
- You will need a scientific or graphing calculator.
- An account on *Perusall*.
- You will need access to the platform *Aktiv Chemistry* during lecture/discussion.
- You will need access to *LabFlow*—your virtual Lab Manual.
- You will need a bound notebook to record data and calculations for lab.
- You will need splash-proof Goggles for lab.

COURSE COMPONENTS

Component	Section	Day(s)	Time	Location	Instructor
Lecture	03	M, W, F	11:00-11:50	CBB 105	Mondloch
Discussion	03D1	T	11:00-11:50	CBB 105	Mondloch
Lab	03L2	M	2:00-4:50	CBB 230	Mondloch
Lab	03L3	T	2:00-4:50	CBB 230	Mondloch
Lab	03L4	W	2:00-4:50	CBB 230	Mondloch
Lab	03L1	Th	11:00-1:50	CBB 230	Mondloch

Additional Important dates to keep in mind over the course of the semester, include: (i) Add/Drop (no grade on transcript) 9/15; (ii) Drop (W on transcript) 11/11.

Lecture & Discussion



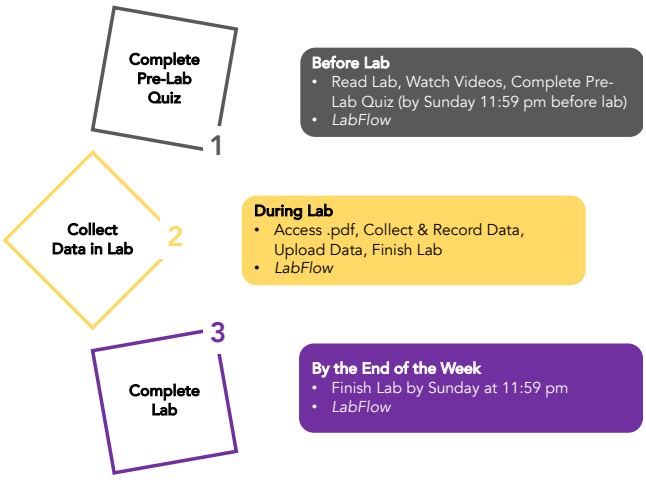
Each week we will meet in-person for Lecture and Discussion. A flow chart of tasks describing how to be successful for this component of the course is shown on the right. It is crucial that you come to Lecture/Discussion prepared (do the reading assignment!) During Lecture you will work on problems and I will address the muddiest points from your reading assignments. Please bring something to write with, your notes, an electronic device (*e.g.*, smart phone, tablet or laptop) to access *Aktiv Chemistry*, and a calculator. Please take advantage of the time in-class to work on chemistry problems and ask questions. An alternative strategy—one that doesn't work as well for most students—is to let you complete all chemistry problems outside of class with little to no help from me. Approximately every other Friday there will be a Quiz or Exam to assess your knowledge of the material.

Topics covered in Chem 105 include: (i) measurements & calculations; (ii) matter & atomic structure; (iii) periodic properties; (iv) molecules & compounds; (v) bonding & molecular structure (vi) chemical reactivity & reaction stoichiometry; (vii) chemical reactivity in aqueous solution; (viii) thermochemistry; and (ix) gases.

Lab

Each week you are expected to attend your lab section in-person. It is important that you work safely in lab; please bring googles and wear closed toe shoes. If you have long hair, please consider putting it up or back. Additional safety considerations will be outlined by your instructor

on a weekly basis. In order to earn a passing grade in Chem 105 you must earn a passing grade in lab *(i.e.*, at least 60%). A flow chart to help you stay on task for lab is shown below.



The lab will NOT be described in detail by your instructor when you arrive to lab. (Your instructor will however demonstrate new experimental techniques and highlight equipment/reagent are locations.) Therefore, it is your responsibility to come prepared for lab. Items that will help you prepare for lab include: (i) reading through the lab (*i.e.*, the .pdf on *LabFlow*) (ii) watching the videos in LabFlow; and (iii) completing the Pre-Lab Quiz in *LabFlow (by Sunday the week before your lab starts at 11:59 pm)*.

During your lab period it is crucial that you collect all the data needed for the lab. This should be done in a bound notebook so that you have a record of your results that you can reference back to in the event that something happens to your data in *LabFlow* (*LabFlow* will also ask you to upload your notebook pages). An example of how to record data and maintain a notebook will be available in Canvas. To complete the lab in a timely manner you will need access to the experimental procedure (*i.e.*, the .pdf from *LabFlow*). This can be done by printing out the .pdf from *LabFlow* and bringing it with you to lab or bringing an electronic device to access *LabFlow* in lab. Please think carefully if you want your electronic device in the lab around water, chemicals, etc… ***I strongly encourage you to complete the entire Lab Report prior to leaving lab***. Your lab instructor can help answer questions, you can re-collect data if you've missed something, and the entire lab process will be fresh in your mind. To complete each Lab Report you will need to work through the following items.

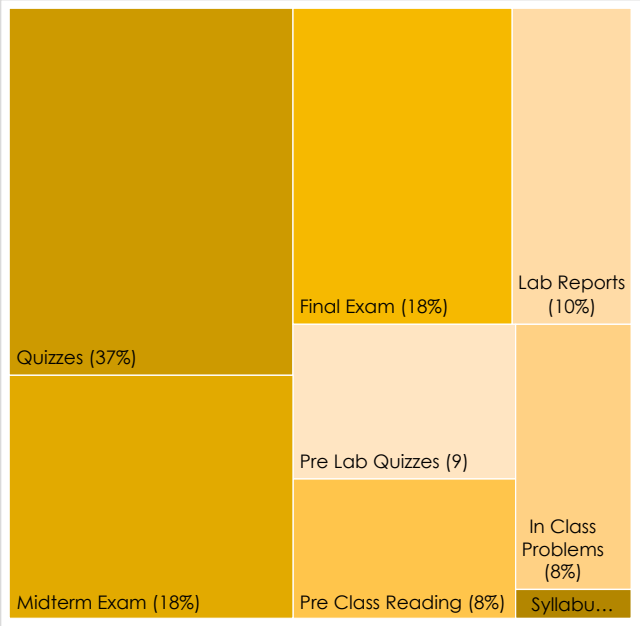
ASSIGNMENTS

You will complete the following assignments throughout the semester. Details and due dates can be found in *Canvas* and on the *Canvas* Calendar. The squares (and their percentages) represent the impact of assignment categories on your grade for the semester. Larger squares indicate a larger share of points, while smaller squares indicate a smaller share of points. Note at the end of each assignment description, there is a make-up policy for assignments in those categories.

- The **Syllabus Quiz (SQ)** (5 pts) will be completed in *Canvas*. This Quiz can be completed by scouring the course syllabus and asking questions during the first week of class.

- There will be six **Quizzes (Q)** (25 pts ea, 150 pts total) administered approximately every other Friday (see the Assignments Calendar on Canvas precise dates). In general, the Quizzes contain 10 multiple choice questions (2.5 pts ea, 25 pts total) and you will have 45 minutes to complete them. Quizzes cannot be made up, however, ff you miss a Quiz or don't perform up to your expectations, you can utilize your Midterm or Final Exam score to replace a low Quiz score. See the details in the Midterm and Final Exam sections below.

- Your **Midterm Exam (ME)** (100 pts) will be multiple choice and cumulative, covering approximately the first half of the semester. The midterm exam will be administered during a lecture period. A second chance—the percentage on your Midterm Exam can replace your lowest Quiz 1, 2, or 3 score. Contact Dr. M. via email if unexpected circumstances arise prior to the Midterm Exam.



- The **Final Exam (FE)** (100 pts) will be administered on Monday 12/19 from 10:15 am–11:15 am (CBB 105). The final exam will be multiple choice and cumulative, covering approximately the second half of the semester. A second chance—the percentage on your Final Exam can replace your lowest Quiz 4, 5, or 6 score. Students who are unable to attend the final exam must make arrangements with me prior to the exam; no make-up will be given if you have seen the final exam.

- Each class period there will be a **Pre-Class Reading (PCR)** assignment (1 pt ea, ~45 pts total). In order to earn points for the Pre-Class Reading you will complete a reading assignment in *Perusall*. More information on how to earn full credit for these assignments will be provided on the first day of class. Over the course of the semester, I will drop your five lowest Pre-Class Reading scores.

- Each class period there will be an **In-Class Problems (ICP)** assignment (1 pt ea, ~45 pts total). They will open in-class must be completed in-class utilizing *Aktiv Chemistry*. Points will be assigned based on effort, not correctness. Over the course of the semester, I will drop your five lowest In-Class Problem scores.

- There will be twelve **Pre-Lab Quizzes (PLQ)** (5 pts ea, 50 pts total) and each one will be submitted in *LabFlow* by Sunday at 11:59 pm prior to your lab period each week. I will drop the two lowest Pre-Lab Quiz scores from your grade. Over the course of the semester, I will drop your two lowest Pre-Lab Quiz scores.

- There will be twelve **Lab Reports (LR)** (5 pts ea, 50 pts total) and each one will be submitted in *LabFlow* by Sunday at 11:59 pm the same week that you complete the lab. I will drop the two lowest Lab Report scores from your grade. There is also a Lab Safety Quiz due the first week of class (5 pts total). Over the course of the semester, I will drop your two lowest Lab Report scores.

GRADING SCALE

The grading scale for Chem 105 is shown below. I will never adjust the grade scale higher. For example, if you obtain 83% in the class, you will receive no less than a B. Please do not ask if I grade on a curve. To move on to Chem 106 you must receive a grade of C- or better. Your grades will be regularly updated on *Canvas* and it is YOUR responsibility to keep track of them.

Grades: A (100–93%); A- (<93–90%); B+ (<90–87%); B (<87–83%); B- (<83–80%); C+ (<80–77%); C (<77–73%); C- (<73–70%); D+ (<70–67%); D (<67–63%); F (<63%)

THE FINE PRINT

Communication

Communication is crucial in all your classes, please keep the following items in mind over the course of the semester:

- Make it a habit to check your email and Canvas page daily!
- If something comes up (no matter how big or small) please communicate with me. I will try to help in any way that I can.

Extenuating Circumstances

My course policies are intended to provide flexibility for students but still assure rigorous assessment of the course material. I understand that extenuating circumstances may arise during the semester for many different reasons (*e.g.*, illness, family illness, military duty, sports, etc…). If extenuating circumstances do arise, it is crucial that you contact me as soon as possible, I try to be reasonable! As per University Policy, make-up Exams are possible for the following reasons:

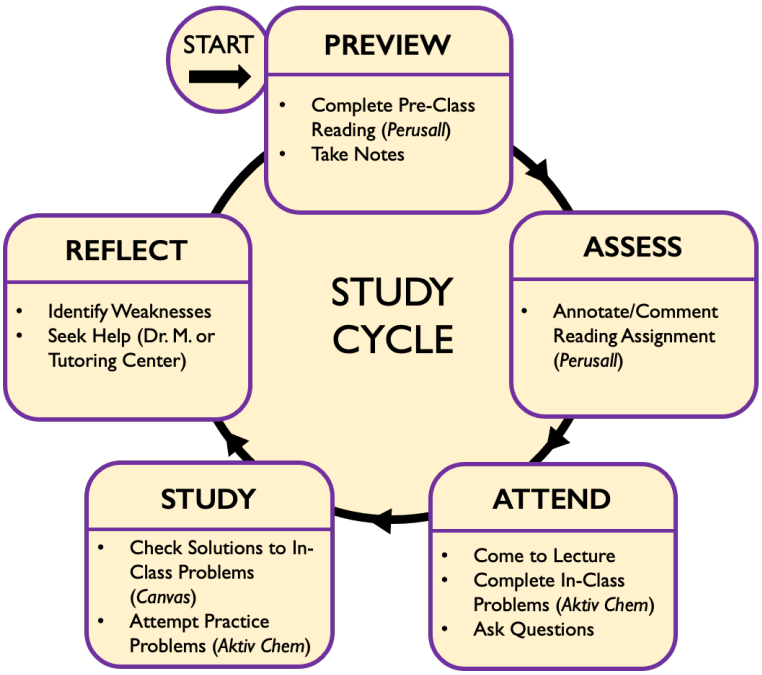
(i) UWSP athletic event. Please get written authorization from your coach (not a student).
(ii) Armed forces related training or drills. Please bring me written authorization from your supervising officer.
(iii) Medical emergency (including quarantine for COVID). Please bring me authorization from your physician.
(iv) Death in the family. Please bring me some sort of documentation.

If you have an excused absence, you must communicate that reason to me via email. This is crucial and helps me keep track of your points in the class. **Please send me an email with your name, Chem 105, Absence, and the date in the subject line (*e.g.*, John Smith Chem 105 Absence 1/24) and detail the date(s) and reason for your absence in the email.** If you plan on missing class and it's an unexcused absence, you do not need to contact me.

Study Hints

This course will not be easy for most students. As a full-time student, it is recommended that you study 2-3 h outside of class per credit. That means you should be spending ~10-15 h per week on chemistry outside of the classroom! I also provide a significant amount of time in the classroom for you to study and complete assignments. Taking advantage of this time will make your chances

of success much higher! Chem 105 might be structured a bit different than many of the other courses that you've taken. Therefore, I've highlighted a study cycle (shown below) to help you succeed on the Quizzes and Exams.



Disability Services

UWSP is committed to providing reasonable and appropriate accommodations to students with disabilities and temporary impairments. If you have a disability or acquire a condition during the semester where you need assistance, please contact the Disability and Assistive Technology Center on the 6th floor of Albertson Hall (library) as soon as possible. More information can be found at https://www.uwsp.edu/datc/Pages/default.aspx.

Free Tutoring with Dr. M.

You might be wondering how to schedule office hours with Dr. M.? I will hold free tutoring sessions (aka office hours) at times the times indicated on my schedule at the back of the syllabus.

UWSP Tutoring Services

The STEM Tutoring Program offers **FREE** tutoring to support you in your STEM classes. The tutors are UWSP students who have done well in their classes and who are here to share their successful study habits and content knowledge to help others succeed. Discussing concepts and practicing problems together clarifies and solidifies knowledge, and the tutors are eager to study with you. If you have questions about the schedules or would like to make an appointment, please visit us in ALB 018 (library basement), email (tlctutor@uwsp.edu), or call (715) 346-3568.

STEM Tutoring – Fall 2022

What	Location	Schedule	Cost
STEM Drop-In Tutoring	CBB 190	No appointment needed – stop by when tutors are available: https://www.uwsp.edu/tlc/Pages/dropInTutoring.aspx	Free
STEM One-on-One Tutoring	ALB 018 or Virtual*	By appointment. Complete online request form here: https://www.uwsp.edu/tlc/Pages/Mathandscischedules.aspx	Free

** Availability of virtual tutoring appointments may be limited*

Academic Integrity

Academic misconduct is serious and can follow you throughout your entire academic and professional career. You are a student at the University of Wisconsin-Stevens Point and you should know the student academic standard and disciplinary procedures. More information can be found at the following link http://www.uwsp.edu/dos/Pages/Academic-Misconduct.aspx.

Access to *Perusall*

Create a free account on *Perusall* at https://www.perusall.com. Your course code is MONDLOCH-JMHK4. Instructions for getting started on *Perusall* are available in Canvas under the tab labeled "Introduction to *Perusall*" in the "Electronic Resources" module.

Access to *Aktiv Chemistry*

Create an account with *Aktiv Chemistry* by visiting https://aktiv.com/chemistry/ and follow the instructions under the tab labeled "Introduction to *Aktiv Chemistry*" in the "Electronic Resources" module. Your class code is **GS4FZU** which will grant you trial access until September 20th, after which you will need to activate (pay for) *Aktiv Chemistry*. Payment can be made with a credit card (cost $33) directly at *https://account.101edu.co/signup*.

Access to *LabFlow*

To access *LabFlow* visit www.labflow.com and follow the instructions on *Canvas* under the tab labeled "Introduction to *LabFlowl*" in the "Electronic Resources" module. Your **enrollment code** depends on your lab section as highlighted in the Table below. Your enrollment code will grant you access to *LabFlow* until September 20th, after which you will need to activate (pay for) *LabFlow*. This can be done on the *LabFlow* website (cost $30) or you can purchase it with your student account (cost $42.85) through the bookstore.

Component	Section	Day(s)	Time	**Enrollment Code**
Lab	03L2	M	2:00-4:50	**81208**
Lab	03L3	T	2:00-4:50	**81209**
Lab	03L4	W	2:00-4:50	**81210**
Lab	03L1	Th	11:00-1:50	**81207**

DR. M's SCHEDULE

	Monday	Tuesday	Wednesday	Thursday	Friday
08:00	R, P, G	R, P, G	R, P, G	CHEM 299/399 CBB 460	Office Hour CBB 444
09:00	Office Hour CBB 444	R, P, G	R, P, G	CHEM 299/399 CBB 460	R, P, G
10:00	R, P, G	R, P, G	R, P, G	CHEM 299/399 CBB 460	R, P, G
11:00	CHEM 105 Lecture 03	CHEM 105 Discussion 01	CHEM 105 Lecture 03	CHEM 105 Lab 03L1	CHEM 105 Lecture 03
12:00	R, P, G	R, P, G	R, P, G	CHEM 105 Lab 03L1	Chem 299/399 CBB 460
13:00	R, P, G	R, P, G	R, P, G	CHEM 105 Lab 03L1	CHEM 299/399 CBB 460
14:00	CHEM 105 Lab 03L2	CHEM 105 Lab 03L3	CHEM 105 Lab 03L4	Office Hour CBB 444	CHEM 299/399 CBB 460
15:00	CHEM 105 Lab 03L2	CHEM 105 Lab 03L3	CHEM 355 Lab 03L4	CHEM 299/399 CBB 460	CHEM 299/399 CBB 460
16:00	CHEM 105 Lab 03L2	CHEM 105 Lab 03L3	CHEM 355 Lab 03L4	CHEM 299/399 CBB 460	R, P, G