

Principles of Chemistry I

CHEM-1211

Spring 2024 Sections 05, 06, 07, 08 3 Credits 01/06/2024 to 05/07/2024 Modified 01/17/2024

Description

First course in a two-semester sequence covering the fundamental principles and applications of chemistry for science majors. Topics to be covered include composition of matter, stoichiometry, periodic relations, and nomenclature. MATH 1113 and CHEM 1211L may be taken concurrently.

This is a Core IMPACTS course that is part of the *STEM* area.

Core IMPACTS refers to the core curriculum, which provides students with essential knowledge in foundational academic areas. This course will help master course content, and support students' broad academic and career goals.

This course should direct students toward a broad *Orienting Question*:

- How do I ask scientific questions or use data, mathematics, or technology to understand the universe?

Completion of this course should enable students to meet the following *Learning Outcome*:

- Students will use the scientific method and laboratory procedures or mathematical and computational methods to analyze data, solve problems, and explain natural phenomena.

Course content, activities and exercises in this course should help students develop the following *Career-Ready Competencies*:

- Inquiry and Analysis
- Problem-Solving
- Teamwork

Requisites

Prerequisites:

(MATH 1113 or MATH 1112) and CHEM 1211L

Corequisites:

Contact Information

Dr. Logan Leslie

Email: lleslie@westga.edu

Office: TLC 2115

Office Hours

11 am - noon and 12:30-1:45 pm on Monday

9:30 am- noon on Tuesday

11 am - noon and 1:15-3:50 pm on Wednesday

2:00-3:00pm on Thursday

Meeting Times

Lecture

12:30 - 1:45 pm

TLC 1301

Workshop (REQUIRED)

time is section dependent

TLC 1103 or TLC 1104

Your workshop meeting time is dependent on which section of the class you are in. This is either at 9:00-10:30 am on Monday or 2:30-4:00 pm on Thursday. This is a required portion of the course and is not optional.

Materials

Chemistry atoms first

Author: Paul Flowers, Klaus Theopold, Richard Langley, Edward Neth, and William Robinson

Publisher: OpenStax

Edition: Second

Availability: It is available on CourseDen

The textbook and homework will be available by a link in CourseDen. There is no fee for the textbook or the homework and it will be available starting day 1 of the class.

From OpenStax:

Good news: your textbook for this class is available for free online! If you prefer, you can also get a print version at a very low cost.

Your book is available in web view and PDF for free. You can also choose to purchase on iBooks or get a print version via the campus bookstore or from OpenStax on Amazon.com.

You can use whichever formats you want. Web view is recommended -- the responsive design works seamlessly on any device. If you buy on Amazon, make sure you use the link on your book page on openstax.org so you get the official OpenStax print version. (Simple printouts sold by third parties on Amazon are not verifiable and not as high-quality.)

Chemistry: Atoms First from OpenStax, Print ISBN 1947172646, Digital ISBN 1947172638,
<https://openstax.org/details/books/chemistry-atoms-first-2e>

Online Homework

Homework will be in the "quizzes" section of CourseDen

Outcomes

1. Students will be able to apply knowledge of the properties of energy and matter to describe chemical systems including atomic structure, chemical bonding, gas properties, and thermodynamics.
2. Students will be able to use available data (such as pressure and volume measurements) to be able to determine additional features of materials (such as calculating the number of atoms in a gas present in a container based on that pressure and volume).
3. Students will be able to make predictions of chemical reaction outcomes based on available chemical data available to them by using knowledge of types of chemical reactions and stoichiometry.
4. Students will be able to relate and apply concepts from the course to situations from everyday life.

Evaluation

Criteria

Type	Weight	Topic	Notes
------	--------	-------	-------

Type	Weight	Topic	Notes
Weekly quizzes	30		There will be a quiz every week when there is not an exam that week.
Homework	10		Homework will be accessed via CourseDen. There will be homework due every week of class.
Workshop	10		This grade is from your weekly workshop meetings. There will be a separate syllabus describing this portion of the grade that you will receive from your workshop leader.
Tests	30 (15 each)		There will be 2 tests given during the semester (in addition to the final exam). These tests will be split into two parts. 50% of each test grade will come from completing an in class exam that involves solving a number of free response questions. The other 50% of the test grade will come from completing an online portion of the exam that will be taken after completing the in person portion of the exam that will cover the multiple choice/short answer portion of the exam. Your total grade for each test will be a combination of the scores from each section added together (50 points for in person portion and 50 points for the online portion)
Final exam	20		This will be a test taken in person on Thursday, May 2 11:00 am - 1:00 pm. This will be a comprehensive final for the entire course.

Breakdown

Grade	Range	Notes
A	89.5 to 100	
B	79.5 to 89.4	
C	69.5 to 79.4	
D	59.5 to 69.4	
F	0 to 59.4	

Assignments

Quiz: Weekly quiz

Each quiz will cover materials from the previous classes and homework. Approximately 50% of the quiz material will be from the past week. The other 50% will be from earlier in the semester. By the nature of chemistry, the course material is cumulative throughout the semester.

The quizzes will be open from Friday until Monday at 11:59 pm each week (except there will be no quiz on the week in which test 1 or test 2 is taken)

Your lowest quiz grade will be dropped at the end of the semester.

Homework: Weekly homework assignments

These assignments will be due every Sunday at 11:59 pm. There will be one assignment put up each week except for weeks where there is an exam. The assignments will be available on CourseDen.

They will be labeled as homework assignments and will be present in the "quizzes" section of CourseDen. Each homework assignment will allow unlimited reattempts.

Test 1 and Test 2

There will be two tests (in addition to the final exam) during the semester. The first test will cover the first half of the semester and the second test will cover the second half of the semester. These tests will have two parts.

part 1 - This will be in person. You will come in person and answer a set of problems. To receive credit on these questions, you will have to show your work in addition to providing an answer. This means I will be able to provide partial credit based on the work shown.

part 2 - This will be an online assessment that is a mix of multiple choice questions and short answer questions (you input a number answer for the question). This portion of the exam will be opened after part 1 is completed. On test week, this part of the exam will be open between Thursday at 5:00 pm and Saturday at 11:59 pm. This will give you some flexibility of when to take the online portion of the exam.

Final Exam

For the final exam you can not use a graphing calculator. You will only be allowed to use a non-programable calculator such as a scientific calculator.

This will be a fully multiple choice comprehensive exam given at the end of the semester.

The final exam will be Thursday May 2, 11:00 am - 1:00 pm

Schedule

This schedule is tentative in terms of what chapters are covered when and could be adjusted slightly. Any changes will include a CourseDen announcement to highlight the change.

When	Topic	Notes
Jan 9 Week 1	Syllabus and Chapter 1 essential ideas	
Jan 16 Week 2	Chapter 2 Atoms, molecules, and ions	

When	Topic	Notes
Jan 23 Week 3	chapter 3 electronic structure and periodic properties	
Jan 30 Week 4	chapter 3 electronic structure and periodic properties	
Feb 6 Week 5	Chapter 4 Chemical bonding	
Feb 13 Week 6	Chapter 4 Chemical bonding and Chapter 5 advanced theories of bonding	
Feb 20 Week 7	Chapter 4 Chemical bonding and Chapter 5 advanced theories of bonding	
Feb 22 Test 1		<p>This exam will have 2 parts.</p> <p>Part 1: Is taken in class on Feb 22nd. This will involve several free response style questions where you must solve problems and show your work. This will be 60% of your grade for test 1.</p> <p>Part 2: Will be taken online after class anytime between 5:00 pm Feb 22nd and 11:59 pm Feb 24h. This will be 40% of your grade for test 1.</p>
Feb 27 Week 8	Chapter 6 composition of substances and solutions	
Mar 5 Week 9	Chapter 6 composition of substances and solutions and Chapter 7 stoichiometry	
Mar 12 Week 9	Chapter 7 stoichiometry of chemical reactions	
Mar 18-22 Spring break		
Mar 26 Week 10	Chapter 7 stoichiometry of chemical reactions	
April 2 Week 11	Chapter 8 Gases	

When	Topic	Notes
April 9 Week 12	Chapter 8 Gases	
April 16 Week 13	Chapter 9 thermochemistry	
April 23 Week 14	Chapter 9 thermochemistry	Last week of classes
Test 2 April 25		<p>This exam will have 2 parts.</p> <p>Part 1: Is taken in class on Apr 25th. This will involve several free response style questions where you must solve problems and show your work. This will be 60% of your grade for test 2.</p> <p>Part 2: Will be taken online after class anytime between 5:00 pm Apr 25th and 11:59 pm Apr 27th. This will be 40% of your grade for test 2.</p>
Final exam May 2 11:00 am - 1:00 pm		Final exam on May 2 11:00 am - 1:00 pm. All you will need is a non-programmable calculator and a pencil. All other materials will be provided at the exam.

* Course Policies and Resources

Workshop

Workshops are an important part of CHEM 1211. In workshops, the large class is broken down into smaller groups. In addition to lectures and co-requisite laboratories, you must attend a workshop that meets once a week outside of class to discuss chemistry problems and improve your understanding of class material.

Workshops are something like study groups, with two prominent differences.

1. Each week's workshop will go over a set of assigned questions. There will be a workbook available which contains material for each workshop, week by week.

2. Each workshop will be led by a student leader who has had the course previously and who has been trained for undertaking this responsibility. The leader will act more as a facilitator than as a tutor. The purpose of workshops is to build confidence in your own ability to do chemistry problem-solving. Each workshop will be scheduled for a 90 minute block of time.

Academic dishonesty

Plagiarism and cheating will not be tolerated. Students caught cheating will receive a 0 for the assignment and possibly face further disciplinary action. A second occurrence will result in receiving an F for the course in addition to any further action taken by the university.

Changes to the syllabus

The information in this syllabus may be updated or changed during the course. Changes to the course syllabus will be provided via CourseDen announcement.

College/School Policies

The College of Arts, Culture, and Scientific Inquiry (CACSI) is dedicated to promoting excellence in teaching, scholarship/creative activity, and service. The College aims to provide students with an understanding of contemporary and historical aspects of the various disciplines within the social, physical, and natural sciences and the arts and humanities. It also aims to support the development of skills needed for professional preparation. CACSI is committed to interdisciplinary inquiry and recognizes the transformative power of education. We empower faculty, staff, students, and alumni to engage responsibly and creatively with the complex environment of the 21st century, relying on the rich knowledge and skills gained from the study of the sciences, the humanities, and the arts. CACSI teaches its students to research, think, write, communicate, and create, empowering them with adaptability, cultural literacy, and sensitivity, along with the critical thinking skills necessary to contribute to their communities and the public good in meaningful ways. CACSI faculty are committed to positively impacting the community at multiple levels via teacher education, public engagement, entertainment, and outreach.

Students are encouraged to practice the following Big Six college experiences to be successful in CACSI coursework and degree programs:

(A) Connect with professors, staff, coaches, etc. who care about you as a person:

1. Connect with a professor(s) who makes you excited to learn;
2. Connect with a mentor(s) who cares about you as a person;
3. Connect with a mentor(s) who pushes you to reach your goals;

(B) Participate in experiential learning opportunities:

4. Complete a long-term project such as a capstone project.
5. Participate in a high-impact practice such as study abroad or an internship
6. Get involved in extracurricular activities and groups.

Academic Support

UWG is committed to student success, and the following resources will help you be more successful in your classes.

Center for Academic Success: The [Center for Academic Success \(http://www.westga.edu/cas/\)](http://www.westga.edu/cas/) provides tutoring, academic coaching, and supplemental instruction to help all undergraduate students succeed academically. For more information, contact them: 678-839-6280 or cas@westga.edu.

University Writing Center: The [University Writing Center \(https://www.westga.edu/writing/\)](https://www.westga.edu/writing/) assists students with the writing process. For more information, contact them: 678-839-6513 or writing@westga.edu.

Accessibility Services: Students with a documented disability may work with UWG Accessibility Services to receive essential services specific to their disability. All entitlements to accommodations are based on documentation and USG Board of Regents standards. If a student needs course adaptations or accommodations because of a disability or chronic illness, or if the student needs to make special arrangements in case the building must be evacuated, the student should notify their instructor in writing and provide a copy of his/her Student Accommodations Report (SAR), which is available only from Accessibility Services. Faculty cannot offer accommodations without timely receipt of the SAR; further, no retroactive accommodations will be given. For more information, please contact [Accessibility and Testing Services \(https://www.westga.edu/student-services/accessibility-testing/index.php\)](https://www.westga.edu/student-services/accessibility-testing/index.php).

Online Course Content

UWG takes students' privacy concerns seriously: technology-enhanced and partially and fully online courses use sites and entities beyond UWG and students have the right to know the privacy policies of these entities. For help with your online classes, additional online tutoring and other student success services, information on privacy and accessibility, and technology requirements, visit this [UWG Online \(https://uwgonline.service-now.com/kb/\)](https://uwgonline.service-now.com/kb/) Help site.

UWG's online virtual tutoring service is Tutor.com, which replaces Smarthinking. Tutor.com provides 24/7, on-demand, 1-to-1 tutoring and homework help in more than 250 subjects. The expert tutors at Tutor.com can help students work through tough homework problems, improve their writing skills, study for a test, review difficult concepts, and so much more! Tutor.com can be accessed in CourseDen under the Resources dropdown menu and is available to all UWG students, regardless of course modality. More information can be found on UWG Online's Tutor.com: [Tutoring Service Knowledge Base article \(https://www.google.com/url?q=https://uwgonline.service-now.com/kb/?id%3Dkb_article_view%26sysparm_article%3DKB0010788&sa=D&source=docs&ust=1689091469862762&usg=AOvVaw2vbm-Y9CAGpzHoFZpHngPF\)](https://www.google.com/url?q=https://uwgonline.service-now.com/kb/?id%3Dkb_article_view%26sysparm_article%3DKB0010788&sa=D&source=docs&ust=1689091469862762&usg=AOvVaw2vbm-Y9CAGpzHoFZpHngPF).

Students enrolled in online courses can find answers to many of their questions in the [Online/Off-Campus Student Guide \(http://uwgonline.westga.edu/online-student-guide.php\)](http://uwgonline.westga.edu/online-student-guide.php).

Honor Code

At the University of West Georgia, we believe that academic and personal integrity are based upon honesty, trust, fairness, respect, and responsibility. Students at West Georgia assume responsibility for upholding the Honor Code. West Georgia students pledge to refrain from engaging in acts that do not maintain academic and personal integrity. These include, but are not limited to plagiarism*, cheating*, fabrications*, aid of academic dishonesty, lying, bribery or threats, and stealing. When a student chooses to enroll at the University of West Georgia students pledge the following:

Having read the honor code of UWG, I understand and accept my responsibility to uphold the values and beliefs described, and to conduct myself in a manner that will reflect the values of the institution in such a way as to respect the rights of all UWG community members. As a UWG student, I will represent myself truthfully and complete all academic assignments honestly.

I understand that if I violate this code, I will accept the penalties imposed, should I be found responsible for violations through the processes due to me as a University community member. These penalties may include expulsion from the University. I also recognize that my responsibility includes willingness to confront members of the University community, if I feel there has been a violation of the Honor Code.

For more information on the University of West Georgia Honor Code, please visit the [Office of Community Standards \(https://www.westga.edu/administration/vpsa/ocs/index.php\)](https://www.westga.edu/administration/vpsa/ocs/index.php) site.

UWG Email Policy

University of West Georgia students are provided a MyUWG e-mail account. The University considers this account to be an official means of communication between the University and the student. The purpose of the official use of the student e-mail account is to provide an effective means of communicating important university related information to UWG students in a timely manner. It is the student's responsibility to check their email.

Credit Hour Policy

The University of West Georgia grants one semester hour of credit for work equivalent to a minimum of one hour (50 minutes) of in-class or other direct faculty instruction AND two hours of student work outside of class per week for approximately fifteen weeks. For each course, the course syllabus will document the amount of in-class (or other direct faculty instruction) and out-of-class work required to earn the credit hour(s) assigned to the course. Out-of-class work will include all forms of credit-bearing activity, including but not limited to assignments, readings, observations, and musical practice. Where available, the university grants academic credit for students who verify via competency-based testing, that they have accomplished the learning outcomes associated with a course that would normally meet the requirements outlined above (e.g. AP credit, CLEP, and departmental exams).

HB 280 (Campus Carry)

UWG follows University System of Georgia (USG) guidance: <https://www.usg.edu/policymanual/section6/C2675> (<https://www.usg.edu/policymanual/section6/C2675>).

You may also visit our website for help with USG Guidance: <https://www.westga.edu/police/campus-carry.php> (<https://www.westga.edu/police/campus-carry.php>).

Mental Health Support

If you or another student find that you are experiencing a mental health issue, free confidential services are available on campus in the [Counseling Center](https://www.westga.edu/student-services/counseling/). (<https://www.westga.edu/student-services/counseling/>). Students who have experienced sexual or domestic violence may receive confidential medical and advocacy services with the Patient Advocates in [Health Services](https://www.westga.edu/student-services/health/) (<https://www.westga.edu/student-services/health/>). To report a concern anonymously, please go to [UWGcares](https://www.westga.edu/uwgcares/) (<https://www.westga.edu/uwgcares/>).

[Online counseling](https://www.westga.edu/student-services/counseling/index.php) (<https://www.westga.edu/student-services/counseling/index.php>) is also available for online students.

ELL Resources

If you are a student having difficulty with English language skills, and / or U.S. culture is not your home culture, specialized resources are available to help you succeed. Please visit the [E.L.L. resource page](https://www.westga.edu/isap/ell-resources.php) (<https://www.westga.edu/isap/ell-resources.php>) for more information.

Additional Items
