

CHEM 1411: General Chemistry I**Syllabus, Fall 2017****Updated to Reflect University Closure from 8/28-9/4****Section:** 05**Time:** 1:00-1:50 MWF**Room:** CFS 121**Instructor:** Dr. Christopher (Kit) Zall**Email:** zall@shsu.edu**Office:** CFS 304**Office Hours:** MWF: 2:30-3:30 pm, or by appointment**Phone:** 294-1525**Required Texts and Course Materials:**

- *Chemistry, The Central Science*, 14th Edition, Brown, LeMay, Bursten, Murphy, Woodward, and Stoltzfus
 - ISBN 978-0134414232 (print book)
 - or ISBN 978-0134414232 (e-Textbook)
- *General Chemistry Laboratory Manual for Chemistry 1411*, SHSU Faculty and Staff
- Texas Instruments TI-30-series calculator
 - No other model of calculator or electronic device will be allowed during exams
- Scantron Form No. 882-e or compatible testing forms
- Pearson account for access to *Mastering Chemistry* online homework.
 - You will be provided with an access code for the course *Mastering Chemistry* site. You do not need to purchase one. See course Blackboard page for instructions

Overview: This course is the first semester of a two-course sequence in General Chemistry intended for science majors. It is an introduction to the study of the material world, focusing on the knowledge and skills required to understand the molecular nature of matter. The principles of scientific measurement and analysis are a major focus. An associated laboratory section counts for 20% of your grade in the course. See your laboratory syllabus (available on Blackboard) for details regarding the laboratory portion of the course.

Grading Breakdown	
	Points
Exam 1	200 125
Exam 2	200 150
Exam 3	125
Final Exam	200
Class Attendance	50
<i>Mastering Chemistry</i> Homework Assignments	150
Laboratory	200
Total	1,000

Important Dates and Events	
Date	Event
Sept. 8	Last day to drop without "Q" Grade
Sept. 18	First week of labs – see lab syllabus
Oct. 2	Midterm Exam #1 – Ch. 1,2,3
Nov. 6	Midterm Exam #2 – Ch. 4,5,6
Nov. 8	Midterm Exam #3 – Ch. 5, 6, 7
Nov. 10	Last day to drop with a "Q" Grade
Nov. 22-26	No Class – Thanksgiving Holiday
Dec. 1	Last day of class
Dec 6	Final Exam: 2:30-4:30 pm, CFS 121

Grading Breakdown: 80% of your grade in this course will come from the lecture portion of the course described in this syllabus. The remaining 20% of your grade is from the associated laboratory section.

- In order to earn a C or higher in this course (which is required for continuing to CHEM 1412), you must earn a C or higher in **both** the lecture **and** the laboratory portions of the course. See your laboratory syllabus for further details regarding that portion of the course.
- Your final letter grade will be determined based on the factors listed above, with the normal cutoffs being:
 - A: above 89.5%
 - B: between 79.6% and 89.5%
 - C: between 69.5% and 79.5%
 - *** as noted above, to earn a C or better for your overall grade, you need to earn a C or better in BOTH the lecture AND the lab sections of this course
 - D: between 59.5% and 69.5%
 - F: below 59.5%
- The cutoffs listed above may be adjusted slightly to reflect class averages. However, see below:

A Final Word on Grades and Cutoffs:

- With so many students taking this course, both in this section and in the other sections of 1411, all grading cutoffs must be applied firmly and fairly, i.e. equally for all students. No special treatment will be given for demonstrating effort, or improvement, or because *you need to pass this class*, or for any other reason.
 - It would not be fair or ethical to treat some students more favorably than others; likewise, it would not be fair or ethical for you to even *ask* for such treatment.

Exams and Exam Scheduling: There will be three midterm exams as well as a final exam. Tentative midterm dates and the date of the final exam are listed above, along with the grading breakdown for the course.

- No makeup or alternative exam dates will be allowed. Exams missed for unexcused absences will result in a grade of 0.
 - Excused absences must be documented and discussed with Dr. Zall beforehand. In the event of an emergency that can be documented, Dr. Zall will discuss possible remedies, potentially including modification to the grading scheme to allow final exam performance to compensate for the missed exam score.
 - Dr. Zall reserves the right to assign a zero should he determine that the circumstances did not justify the absence.
- The dates of the midterm exams are tentative and may be postponed, but the date of the final exam cannot be changed.
 - The dates of midterms may be changed if the class is notified at least two weeks in advance. However, the date of the final exam cannot be changed. **Make your family/work/vacation plans now to avoid conflicts.**

Class Attendance: Attendance is graded and counts for 50 points (5% of your total grade).

- You must sign the class roster that is passed around at the start of each class period to record your attendance. Failure to sign the roster will count as an absence.
 - If the roster is not passed around in class, that day's attendance is not recorded and will not count towards your total.

- Being disruptive in class, or sleeping/watching videos/otherwise visibly not participating in class, will be counted as an absence.
- You get four “free absences,” i.e. students with four or fewer absences at the end of the course will receive full credit for class participation.
 - No other “excused absences” will be granted, except for regularly scheduled, University-sanctioned activities such as sports, band, or similar activities.
 - If you have four or fewer recorded absences at the end of the term, you receive a 100% (50/50) attendance score.
 - If you have more than four absences, your attendance grade will be calculated as a percentage of the number of classes attended out of the number of total classes (i.e. 32 classes attended out of 40 total = 80%, or 40 points).
- Dates with exams do not count towards your attendance total.

Mastering Chemistry Online Homework:

- Graded online homework assignments will use the *Mastering Chemistry* online program.
- These count for 150 points altogether (15% of your total grade).
 - The number of points for each individual assignment may vary but should be between 5-10 points. At the end of the semester, if the total number of points from these assignments does not equal 150, your percentage of the total will be converted to the corresponding percentage of 150, rounding up to the nearest whole number. For instance, if 200 points’ worth of homework problems have been assigned and you have earned 100 points from these assignments, your final homework grade would be scaled to 75 points of the 150 possible.
- You will be provided with an access code that you will use to register for the *Mastering Chemistry* site for this course. **You do not need to purchase an access code on your own.** However, if you do not already have a Pearson account from a previous Pearson MyLab and Mastering product, you will need to create one.
- You are encouraged to work through the graded homework problems in groups. However, make sure that you understand how to solve the problems – do not simply copy your group members’ work. Doing so will leave you unprepared for the exams and unlikely to pass the course.

Additional Resources:

- Supplemental Instruction (SI) Review Sessions
Optional review sessions will be held once a week, led by a student SI Leader who has passed this class in a previous term. The SI Leader will attend the lectures and then hold interactive study sessions aimed at developing a deeper understanding of the course material, through worked problems and group discussions. This is free, non-graded help on the course. Further details will be provided in class once a schedule has been worked out.
- *Mastering Chemistry* Online Dynamic Study Modules
In addition to the graded assignments, online practice problems and tutorials for many topics can be found at the course *Mastering Chemistry* site.
- The Chemistry Department provides free, drop-in tutoring sessions.
 - Tutors do not become available until the start of labs, typically 2-3 weeks after the first week of lecture

- Tutor schedules will be posted on the Blackboard site for the *lab* portion of this course when available (typically 2-3 weeks after the first week of lecture).

Accommodation:

If you have a disability that might affect your performance in this class, you should contact the Services for Students with Disabilities (SSD) at the SHSU Counseling Center (phone: 936-294-1720) to apply for accommodations. Make an appointment with the course instructor after SSD has approved your accommodations.

Academic Dishonesty:

Any student found guilty of dishonesty in their academic work will be subject to disciplinary action. The University may initiate disciplinary proceedings against a student accused of any form of academic dishonesty including, but not limited to, cheating, plagiarism, and the abuse of resource materials. If the instructor believes that an assignment, exam, or laboratory report is a copy of another student's work, BOTH copies will receive a grade of 0%, and disciplinary action will be considered.

Course Outline and Learning Objectives:

We will cover Chapters 1-9 in the order they are presented in the book with relatively minor exceptions, namely to omit Sections 6-8 of Chapter 7. On average, we will cover one chapter every four class periods, or a little over a week. The course schedule listed below is **tentative** and subject to change.

More up-to-date information, including readings and suggested problems from the end of the chapter will be given in each day's lecture slides, which are also available on Blackboard. At the end of each chapter, a review worksheet will be posted on Blackboard with sample problems similar to the ones that you will find on the exams. These practice problems are highly recommended, but they will not be graded.

Week	Date	Chapter/Section	Topic
1	8/23/17		Introduction
	8/25/17	1.1, 1.2, 1.3	Classification and Properties of matter
2	8/28/17	1.4, 1.5, 1.6	Units of Measurement and Uncertainty
	8/30/17	1.7	Significant Figures and Dimensional Analysis
	9/1/17	1.7	Applications of Dimensional Analysis
3	9/4/17		No class – Labor Day
	9/6/17	1.4, 1.5, 1.6	Units of Measurement and Uncertainty in Measurement
	9/8/17	1.7	Significant Figures and Dimensional Analysis
4	9/11/17	2.1	Atomic Theory
	9/13/17	2.2, 2.3	Atomic Structure
	9/15/17	2.4, 2.5	The Periodic Table, Molecular and Ionic Compounds
5	9/18/17	2.6, 2.7	Molecular Formulas and Nomenclature
	9/20/17	3.1,	Balancing Equations, Reaction Types
	9/22/17	3.2, 3.3	Formula Weights, Avogadro's Number and the Mole

6	9/25/17	3.4	Molar Conversions and Molar Mass
	9/27/17	3.6	Reaction Stoichiometry
	9/29/17	3.7,3.5	Limiting Reactants, Yields, and Elemental Analysis
7	10/2/17		Exam 1 (Ch 1-3)
	10/4/17	4.1,4.2	Aqueous Solutions and Solubility
	10/6/17	4.3	Precipitation and Acid/Base Reactions
8	10/9/17	4.4	Redox Reactions
	10/11/17	4.5	Concentrations of Solutions, Solution Stoichiometry
	10/13/17	4.6	Titrations, Preparing and Diluting Solutions
9	10/16/17	5.1, 5.2,	Energy, The First Law
	10/18/17	5.3, 5.4	Internal Energy and Enthalpy
	10/20/17	5.5	Calorimetry
10	10/23/17	5.6, 5.7	Enthalpies of Formation, Using Hess' Law
	10/25/17	6.1, 6.2	Intro to Quantum: Light and Quantization
	10/27/17	6.3, 6.4	Models of the Atom
11	10/30/17	6.5	Orbitals and Wavefunctions
	11/1/17	6.6, 6.7	Representations of Orbitals and Electron Configs.
	11/3/17	6.8, 6.9	Electron Configurations and the Periodic Table
12	11/6/17		Exam 2 (Ch 4-6)
	11/8/17	7.1, 7.2, 7.3	Effective Nuclear Charge, Sizes of Atoms and Ions
	11/10/17	7.4,7.5,8.2	Ionization Energy, Electron Affinity, and Ionic Bonding
13	11/13/17	8.1, 8.3, 8.4	Lewis Symbols and Covalent Bonding
	11/15/17	8.5	Drawing Lewis Structures
	11/17/17	8.6, 8.7	Resonance and Exceptions to the Octet Rule
14	11/20/17	9.1, 9.2	VSEPR and Molecular Geometries
	11/22/17		No class – Thanksgiving Holiday
	11/24/17		No class – Thanksgiving Holiday
15	11/27/17	9.3	Molecular Shape and Molecular Polarity
	11/29/17	9.4, 9.5, 9.6	Valence Bond Theory
	12/1/17	9.7	Molecular Orbital Theory