

Chemistry 1311/1111
General Chemistry I
Summer I 2022
June 6 – July 8, 2022

Dr. Janet L. Maxwell
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Location of Office: Collaborate
Office Hours: MTWRF 8:00 – 9:00 am
or by appointment

Required Texts:

- *Openstax Chemistry, 2nd ed.*
ISBN-13: 978-1-947172-61-6 (free online)
- McGraw-Hill ALEKS Homework System and Virtual Labs
ISBN: 9781264299478

Also Required:

- A scientific calculator (Bring your calculator to lab and to class every day)
- A webcam
- A pack of colored pencils or colored markers

Course Description: In this class, you will study the fundamental laws and theories of chemistry, types of bonding, chemical nomenclature, stoichiometry, thermochemistry, electronic structure and gases.

After completion of this course students will be able to:

- Demonstrate technical and analytical skills in the area of general chemistry.
 - Students will be able to use the periodic table to determine basic atomic information and to predict trends in atomic properties.
 - Students will be able to interconvert between chemical names and formulas to the extent that they can work problems given only one of those pieces of information.
 - Students will be able to classify common types of chemical reactions and predict the outcomes of reactions.
- Analyze complex chemical problems and draw logical conclusions.
 - Students will be able to use an understanding of atomic structure at the basic and atomic levels to analyze the structure and reactivity of substances and chemical species.
 - Students will be able to use an understanding of how energy interacts with matter to predict stable chemical species, and perform thermodynamic calculations describing chemical reactions.
- Employ mathematics in the analysis of chemical problems.
 - The mole concept, chemical formulas and balanced chemical equations will be used to do chemical calculations that relate macroscopic measurements to numbers of atoms, ions or molecules.
 - Students will be able to do calculations involving solution concentration and know how to prepare solutions of given concentrations.
 - Students will be able to quantitatively predict gas properties using gas law calculations.
- Understand and apply scientific reasoning in the chemical sciences.

- Students will be able to use an understanding of ions and molecules at the atomic level to predict the behavior of reactions in aqueous solutions.
- Students will be able to use the basic ideas of quantum mechanics to describe how molecular bonds form and to predict molecular shape and polarity. Molecular structure and polarity will be used to predict the forces between molecules and relate those forces to the states of matter and phase changes.

Grading:	Three One-Hour Exams	3 x 100 = 300 pts
	One Two-Hour Final Exam (comprehensive)*	1 x 150 = 150 pts
	Quizzes	9 x 15 = 135 pts
	(10 quizzes will be given; the lowest quiz grade will be dropped; no make-ups will be given for quizzes)	
	ALEKS Online Homework Grade	200 pts
	Attendance - Lecture	100 pts
	Attendance - Lab	100 pts
	Lab Grade	9 x 25 = <u>225 pts</u>
		Total = 1210 pts

***The final exam will be the one semester comprehensive standardized ACS exam for General Chemistry**

Total scores within the following ranges at the end of the semester guarantee the student at least the indicated letter grade:

A	900-1000 pts	(90% of the total or better)
B	800-899 pts	(80-89% of the total)
C	700-799 pts	(70-79% of the total)
D	600-699 pts	(60-69% of the total)
F	0-599 pts	(less than 60% of the total)

Deadline: Last Day to drop the course: Monday, June 27, 2022

Attendance Policy: Roll will be based on the Collaborate reports for both the lecture and lab sections. Students who do not attend the entire lecture or lab session will have their points pro-rated on the basis of the amount of time spent in session. The collaborate program does not take into account the times your computer disconnects and reconnects again.

Disabilities: Persons with disabilities which may warrant academic accommodations must contact the Student Life Office, Room 112, University Center, in order to request and to implement academic accommodations.

Quizzes: Quizzes will be given on Respondus as shown in the course schedule on the last page of the syllabus. Students will write their answers on a blank quiz form and submit it to gradescope immediately. Only the gradescope submission will be graded. Quizzes will be worth 15 points. The student's lowest quiz grade will be dropped. Make-up quizzes will not be given for any reason.

Calculators: Students are expected to bring a scientific calculator to class every day, including days with quizzes or exams. The calculator may be a graphing calculator, or just a regular scientific calculator. **You cannot**

depend on your cell phone to be able to calculate values in a chemistry class. The cheapest Texas Instruments calculator is a TI-30Xa for less than \$10 at Walmart or Walmart.com. Some students prefer the TI-30X IIS calculator which sells for a minimum of about \$13 at Walmart or Walmart.com. If you have a TI-83 or TI-84 from High School or a previous class, that is a great calculator too.

Make-up Exam Policy: You must have a valid excuse for missing an exam and Dr. Maxwell has the right to ask you for documentation of that. Instead of giving make up exams, exams you missed will get grades based on the comprehensive final exam. To calculate your missed exam score, Dr. Maxwell will take the number of questions on the final over the sections on the exam you missed that you got right and divide by the total number of questions on the final over the sections on the exam you missed and then normalize the grade to 100 points.

Policy on Academic Dishonesty: See the ASU Student Handbook for definitions of cheating and plagiarism. Any student who is caught cheating or plagiarizing in this class will be subject to failure in the course and possible suspension from the University. Cheating and/or plagiarism will not be tolerated! Angelo State University expects its students to maintain complete honesty and integrity in their academic pursuits. Students are responsible for understanding the Academic Honor Code, which is contained in both print and web versions of the Student Handbook.

Online Homework System: In order to enroll in the ALEKS homework system, go to content on Blackboard and click the ALEKS link.

Our Class Code is: [PELNQ-WHMCD](#)

After you enroll in the homework system, you must complete an initial knowledge check which will allow the system to determine which topics you have already mastered.

Blackboard: Blackboard is a computer learning environment to help you with your studies. To log onto blackboard, type in <http://blackboard.angelo.edu> into your web browser. **Do not type in www.** Then click the grey "Login" button to the left of the screen. Next type in your username and password. Your username and password are assigned by IT. Please see Dr. Maxwell if you have trouble logging onto Blackboard.

Lab Course: This semester we will be doing online virtual labs from McGraw Hill, which are included in the ALEKS system.

Students are expected to complete the online portion of the lab with a score of 100%. As long as that is done, the grade for the labs will be solely based on the required lab report for each lab. If the online lab is not completed correctly, the instructor has the right to refuse to grade the lab report and give it zero points or to deduct points from your lab report grade for not completing the online lab.

Blackboard Collaborate: All classes will be held in a Blackboard Collaborate session. T

Webcams:

Webcams are required for this course. The webcams usually come with a microphone. Most laptop computer have webcams.

	Date	Lecture:	Other:
M	June 6	Chapter 1. Essential Ideas	
T	June 7	Chapter 2. Atoms, Molecules and Ions Quiz #1 due 11:59 pm	11:00 Lab Class Submitting Grades to Gradescope Lab 1: Measurement and Presentation of Data (25 pts)
W	June 8	Chapter 2 (cont.) Prerequisite Review Homework due 11:59 pm	11:00 Lab Class Lab 2: Density of a Cube (25 pts)
R	June 9	Chapter 3. Composition of Substances and Solutions Quiz #2 due 11:59 pm	11:00 Lab Class Lab 3: Reactions in Solution (25 pts)
F	June 10	Chapter 3 (cont.) Objective 1 Homework due 11:59 pm	
M	June 13	Chapter 3 (cont.) Quiz #3 due 11:59 pm	Lab 1 Report Due at 11 am
T	June 14	9:00 am Exam 1 Objective 2 Homework due 11:59 pm	12:30-1:45 pm Lecture Chapter 4. Stoichiometry of Chemical Reactions (Balancing Equations)
W	June 15	Chapter 4 (cont.)	11:00 Lab Class Lab 4: Synthesis of Calcium Carbonate (25 pts) Lab 2 Report Due at 11 am
R	June 16	Chapter 4 (cont.) Quiz #4 due 11:59 pm	Lab: 11:00 Lab Class Lab 5: Standardization of NaOH/Titration of Vinegar (25 pts) Lab 3 Report Due at 11 am
F	June 17	Chapter 5. Thermochemistry Objective 3 Homework due 11:59 pm	
M	June 20	Chapter 5 (cont.)	
T	June 21	Chapter 6. Electronic Structure and Periodic Properties of Elements Quiz #5 due 11:59 pm Objective 4 Homework due 11:59 pm	11:00 Lab Class Lab 6: Determining the Heat Capacity of a Calorimeter and Enthalpy of Dissolution (25 pts) Lab 4 Report Due at 11 am
W	June 22	9 am Exam 2	12:30-1:45 pm Lecture Chapter 6 (cont.)

	Date	Lecture:	Other:
R	June 23	Chapter 7. Chemical Bonding and Molecular Geometry	11:00 Lab Class Lab 7: Molecular Shapes lab, Part 1 (25 pts) Lab 5 Report Due at 11 am
F	June 24	Chapter 7 (cont.) Objective 5 Homework due 11:59 pm	
M	June 26	Sunday Quiz #6 due 11:59 pm Sunday	
M	June 27	Chapter 7 (cont.)	
T	June 28	Chapter 8. Advanced Theories of Covalent Bonding Quiz #7 due 11:59 pm Objective 6 Homework due 11:59 pm	11:00 Lab Class Lab 7: Molecular Shapes, Part 2 (25 pts) Lab 6 Report Due at 11 am
W	June 29	Chapter 8 (cont.) Quiz #8 due 11:59 pm	11:00 Lab Class Lab 8: Ideal Gas Law Constant and Graham's Law (25 pts)
R	June 30	9 am Exam 3	12:30-1:45 pm Lecture Chapter 8 (cont.)
F	July 1	Chapter 9. Gases Objective 7 Homework due 11:59 pm	
M	July 4	Holiday – No class	
T	July 5	Chapter 9 (cont.) Quiz #9 due 11:59 pm Objective 8 Homework due 11:59 pm	Lab 7 Report Due at 11 am
W	July 6	Chapter 10, Sec. 1 Intermolecular Forces Quiz #10 due 11:59 pm	Lab 8 Report Due at 11 am
R	July 7		
F	July 8	9:00 am ACS Final Exam (one semester comprehensive)	

Note: the lowest quiz grade will be dropped. No exam grades will be dropped.