Chemistry 1312/1112
General Chemistry II
Summer II 2021
July 11 – August 12, 2022
9 am – 10:45 am MTWRF

Dr. Janet L. Maxwell
janet.maxwell@angelo.edu

Location of Office: Collaborate
Office Hours: MTWRF 8-9 am
or by appointment

Required Texts:

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

Also Required:

- A scientific calculator (Bring your calculator to class every day)
- A Webcam

Course Description: A continuation of the study of the fundamental laws and theories of chemistry, chemical nomenclature, chemical equilibrium, metals and non-metals and their compounds, and introduction to nuclear chemistry.

Prerequisites: Chem 1311 and Chem 1111 are to be completed with a grade of C or better before Chem 1312. Proficiency in Algebra is required. Only students eligible to take a college-level math course may take Chem 1312.

Student Learning Outcomes:

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 (10 quizzes will be given; the lowest quiz grade will be dropped; no make-ups will be given for quizzes)	9 x 15 = 135 pts
ALEKS Online Homework Grade	200 pts
Lecture Attendance	100 pts
Lab Attendance	100 pts
Lab Grade	8 x 25 = 200 pts
	Total = 1185 pts

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

A 90% weighted total or better
B 80-89% weighted total
C 70-79% weighted tota
D 60-69% weighted total
F less than 60% weighted total

Deadline: Last Day to drop the course: Monday, August 1

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 Disability Services in order to request and to implement academic accommodations. Their email address is ADA@angelo.edu.

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.

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

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

ALEKS homework: In order to enroll in the ALEKS homework system, go to content on Blackboard and click the ALEKS link.
Our course code: **FU4KN-QMRXD**

Lab Course: This semester we will be doing online virtual labs from McGraw Hill, which are included in ALEKS. 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. ALEKS homework: In order to enroll in the ALEKS homework system, go to content on Blackboard and click the ALEKS link.
Our course code: **FU4KN-QMRXD**

CHEMISTRY 1312/1112 COURSE SCHEDULE Summer II 2022

	Date	Lecture:	Other:
M	July 11	Sections 10.2-10.6	
T	July 12	Chapter 10 (cont.) **Quiz #1 (Take Home) due 11:59 pm**	11:00 am Lab Class Lab 1: Freezing Point Depression (25 pts)
W	July 13	Chapter 10 (cont.) **Prerequisite Homework Due on ALEKS at 11:59 PM**	11:00 am Lab Class Lab 2: Qualitative Analysis (25 pts)
R	July 14	Chapter 11. Solutions and Colloids **Quiz #2 (Take Home) due 11:59 pm** **Objective 1 Homework Due 11:59 pm**	11:00 am Lab Class Lab 3: The Effect of Concentration on the Rate of Reactions (25 pts)
F	July 15	Chapter 11, cont.	
	July 17	Sunday **Objective 2 Homework Due 11:59 pm**	
M	July 18	Chapter 12. Kinetics	**Lab 1 Report Due at 11 am**
T	July 19	**9:00 am Exam 1**	12:30-1:45 pm Lecture Chapter 12 (cont.) **Quiz #3 (Take Home) due 11:59 pm**
W	July 20	Chapter 12 (cont.) **Objective 3 Homework Due 11:59 pm**	11:00 am Lab Class Lab 4: The Effect of Temperature on the Rate of Reactions (25 pts) **Lab 2 Report Due at 11 am**
R	July 21	Chapter 13. Fundamental Equilibrium Concepts **Quiz #4 (Take Home) due 11:59 pm**	11:00 am Lab Class Lab 5: Spectrophometry and Equilibrium (25 pts) **Lab 3 Report Due at 11 am**
F	July 22	Chapter 13 (cont.)	
	July 24	Sunday **Objective 4 Homework Due 11:59 pm**	
M	July 25	Chapter 13 (cont.)	
T	July 26	Chapter 13 (cont).	11:00 am Lab Class Lab 6: Determining the pK_a of an Unknown Weak Acid (25 pts) **Lab 4 Report Due at 11 am**
W	July 27	**9 am Exam 2**	12:30-1:45 pm Lecture Chapter 14. Acid-Base Equilibrium **Quiz #5 (Take Home) due 11:59 pm**

	Date	Lecture:	Other:
R	July 28	Chapter 14 (cont.) **Objective 5 Homework Due 11:59 pm**	11:00 am Lab Class Lab 7: Buffer Range and Capacity (25 pts) **Lab 5 Report Due at 11 am**
F	July 29	Chapter 14 (cont.)	
	July 31	Sunday **Objective 6 Homework Due 11:59 pm** **Quiz #6 (Take Home) due 11:59 pm Sunday**	
M	August 1	Chapter 15. Equilibria of Other Reaction Classes	
T	August 2	Chapter 16. Thermodynamics **Quiz #7 (Take Home) due 11:59 pm**	11:00 am Lab Class Lab 8: Electrochemistry (25 pts) **Lab 6 Report Due at 11 am**
W	August 3	Chapter 16 (cont.) **Objective 7 Homework Due 11:59 pm**	11:00 am Lab Class Review for Exam 3
R	August 4	**9 am Exam 3**	12:30-1:45 pm Lecture Chapter 16 (cont.) **Homework Assigned** **Quiz #8 (Take Home) due 11:59 pm**
F	August 5	Chapter 17. Electrochemistry	
	August 7	Sunday **Objective 8 Homework Due 11:59 pm**	
M	August 8	Chapter 17 (cont.) **Quiz #9 (Take Home) due 11:59 pm**	**Lab 7 Report Due at 11 am**
T	August 9	Chapter 17 (cont.)	**Lab 8 Report Due at 11 am**
W	August 10	Chapter 21. Nuclear Chemistry **Quiz #10 (Take Home) due 11:59 pm** **Objective 9 Homework Due 11:59 pm**	
R	August 11		
F	August 12	**9:00 am ACS Final Exam** (two semester comprehensive)	

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