Chemistry 1311/1111
General Chemistry I
Summer I 2021
June 7 – July 9, 2021

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

Location of Office: Collaborate
Office Hours: MTWF 8:00 – 9:00 am or by appointment

Required Texts:
- **Openstax Chemistry, 2nd ed.**
- McGraw-Hill ALEKS Homework System
  ISBN: 9781264299478
- McGraw-Hill Connect Virtual Labs
  ISBN: 9781264498475

Also Required:
- A scientific calculator (Bring your calculator to lab and to class every day)
- A webcam

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 = 225 pts
- 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 28, 2021

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 as shown in the course schedule in this syllabus. Instead of having the quizzes in class, they will be take-home quizzes, typically due at 11:59 pm the day they are assigned. 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, click on the following link:

Our Class Code is: CCJGR-MTNR9

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.

https://www.mheducation.com/highered/support/connect/first-day-of-class/blackboard.html

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. There is an attendance grade worth a total of 200 points out of 1210 for attendance. Half the attendance points will be allocated to the lecture course and the other half will be allocated to the lab course.

Webcams: Webcams are required for this course. The webcams usually come with a microphone. Most laptop computers have webcams.
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<thead>
<tr>
<th>Date</th>
<th>Lecture:</th>
<th>Other:</th>
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<tbody>
<tr>
<td>M June 7</td>
<td>Chapter 1. Essential Ideas</td>
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<td>T June 8</td>
<td>Chapter 2. Atoms, Molecules and Ions</td>
<td>11:00 Lab Class</td>
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<td>Quiz #1 (Take Home) due 11:59 pm</td>
<td>Submitting Grades to Gradescope</td>
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<td>Lab 1: Measurement and Presentation of Data (25 pts)</td>
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<td>W June 9</td>
<td>Chapter 2 (cont.) Prerequisite Review</td>
<td>11:00 Lab Class</td>
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<td>Homework due 11:59 pm</td>
<td>Lab 2: Density of a Cube (25 pts)</td>
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<td>R June 10</td>
<td>Chapter 3. Composition of Substances and Solutions</td>
<td>11:00 Lab Class</td>
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<td>Quiz #2 (Take Home) due 11:59 pm</td>
<td>Lab 3: Reactions in Solution (25 pts)</td>
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<td>F June 11</td>
<td>Chapter 3 (cont.) Objective 1 Homework</td>
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<td>due 11:59 pm</td>
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<td>M June 14</td>
<td>Chapter 3 (cont.)</td>
<td>Lab 1 Report Due at 11 am</td>
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<td>Quiz #3 (Take Home) due 11:59 pm</td>
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<td>T June 15</td>
<td>9:00 am Exam 1</td>
<td>12:30-1:45 pm Lecture</td>
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<td>Objective 2 Homework due 11:59 pm</td>
<td>Chapter 4. Stoichiometry of Chemical Reactions</td>
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<td>W June 16</td>
<td>Chapter 4 (cont.)</td>
<td>11:00 Lab Class</td>
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<td>Lab 4: Synthesis of Calcium Carbonate (25 pts)</td>
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<td>R June 17</td>
<td>Chapter 4 (cont.)</td>
<td>Lab: 11:00 Lab Class</td>
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<td>Quiz #4 (Take Home) due 11:59 pm</td>
<td>Lab 5: Standardization of NaOH/Titration of Vinegar (25 pts)</td>
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<td>F June 18</td>
<td>Chapter 5. Thermochemistry</td>
<td>Lab 3 Report Due at 11 am</td>
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<td>Objective 3 Homework due 11:59 pm</td>
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<td>M June 21</td>
<td>Chapter 5 (cont.)</td>
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<td>T June 22</td>
<td>Chapter 6. Electronic Structure and Periodic Properties of Elements</td>
<td>11:00 Lab Class</td>
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<td>Quiz #5 (Take Home) due 11:59 pm</td>
<td>Lab 6: Determining the Heat Capacity of a Calorimeter (25 pts)</td>
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<td>Objective 4 Homework due 11:59 pm</td>
<td>Lab 4 Report Due at 11 am</td>
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<tr>
<td>W June 23</td>
<td>9 am Exam 2</td>
<td>12:30-1:45 pm Lecture</td>
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<td>Chapter 6 (cont.)</td>
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<td>R</td>
<td>June 24 Chapter 7. Chemical Bonding and Molecular Geometry</td>
<td>11:00 Lab Class</td>
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<td>Lab 7: Molecular Shapes lab, Part 1 (25 pts)</td>
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<td>Lab 5 Report Due at 11 am</td>
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<td>F</td>
<td>June 25 Chapter 7 (cont.)</td>
<td>Objective 5 Homework due 11:59 pm</td>
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<td>June 27 Sunday</td>
<td>Quiz #6 (Take Home) due 11:59 pm Sunday</td>
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<td>M-T</td>
<td>June 29 Chapter 8. Advanced Theories of Covalent Bonding</td>
<td>Quiz #7 (Take Home) due 11:59 pm</td>
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<td>Objective 6 Homework due 11:59 pm</td>
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<td>W</td>
<td>June 30 Chapter 8 (cont.)</td>
<td>11:00 Lab Class</td>
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<td>Lab 7: Molecular Shapes, Part 2 (25 pts)</td>
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<td>Lab 6 Report Due at 11 am</td>
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<td>R</td>
<td>July 1 9 am Exam 3</td>
<td>12:30-1:45 pm Lecture</td>
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<td>F</td>
<td>July 2 Chapter 9. Gases</td>
<td>Objective 7 Homework due 11:59 pm</td>
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<td>July 5 Chapter 9 (cont.)</td>
<td>Quiz #9 (Take Home) due 11:59 pm</td>
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<td>T</td>
<td>July 6 Chapter 9 (cont.)</td>
<td>Objective 8 Homework due 11:59 pm</td>
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<td>Lab 7 Report Due at 11 am</td>
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<td>W</td>
<td>July 7 Chapter 10, Sec. 1</td>
<td>Lab 7 Report Due at 11 am</td>
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<td>Intermolecular Forces</td>
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<td>Quiz #10 (Take Home) due 11:59 pm</td>
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<td>July 8</td>
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<td>F</td>
<td>July 9 9:00 am ACS Final Exam</td>
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Note: the lowest quiz grade will be dropped. No exam grades will be dropped.