FUNDAMENTALS OF CHEMISTRY I  
CHEM 119  Fall 2019  
Section ___;

**Instructors:**  
Ms. Grace Townsend (lecture)  
Office: MAIN 414C  
townseng@tamu.edu  
Lecture Time and Location: _____________________________  
Office hours: ______________________

Ms. Grace Townsend (laboratory)  
Office: MAIN 414C  
townseng@tamu.edu  
Laboratory Time and Location: _________________________

**TA:** __________________________  
Email: __________________________  
Office hours in MAIN 314 ______________

**Course Description and Prerequisites:** Chemistry 119 is the first course in a two-semester sequence in general chemistry offered by the Chemistry department. These two courses cover the fundamental principles and applications of chemistry designed for science and chemical engineering majors. In this 4-credit course, students will be introduced to modern theories of atomic structure and chemical bonding; chemical reactions; stoichiometry; states of matter; solutions; equilibrium; acids and bases; coordination chemistry. In these integrated Lecture/Laboratory courses, both lecture and lab components are required and, since there is no separate lab course, independent credit for either separate component of the course is not offered.

**CORE CURRICULUM:** This course meets the state requirements for Core Curriculum in Life and Physical Science. Courses in this category focus on describing, explaining, and predicting natural phenomena using the scientific method. Courses involve the understanding of interactions among natural phenomena and the implications of scientific principles on the physical world and on human experiences.

**Core objectives for the Life and Physical Sciences Foundational Component Area:**
1. **Critical Thinking:** creative thinking; innovation; inquiry; and analysis, evaluation, and synthesis of information. You will be challenged to meet this core objective through free response questions on exams, problems given in class, and Pop Up Points (PUPs) offered through eCampus.
2. **Communication:** effective development, interpretation and expression of ideas through written, oral, and visual communication. This core objective will be met through class discussions and the Extend Your Knowledge Project.
3. **Empirical and Quantitative Skills:** manipulation and analysis of numerical data or observable facts resulting in informed conclusions. This core objective will be met through problems solved in class and on exams.
4. **Teamwork:** ability to consider different points of view and to work effectively with others to support a shared purpose or goal. This core objective will be met through the Extend Your Knowledge team assignment.
REQUIRED TEXT: Chemistry: *An Atoms First Approach*; Zumdahl/Zumdahl - ©2016; The textbook can be in any form - hardback, 3-hole punched with soft back, or e-book.

REEF POLLING
Reef Poll will be used in class and Recitation. Do not try to register multiple times with free trial accounts. It is highly probably your grades will not all be included in the final reports!!
GO TO: https://www.iclicker.com/pricing follow instructions to purchase and download the application to your smartphone, tablet and/or laptop that you plan to use in class (the fee includes multiple device access). For more information see the pdf file on iClicker Cloud (aka REEF) in e-campus.

ONLINE HOMEWORK: Sapling Learning Tutorial Module (INSTRUCTIONS FOR PURCHASE WILL BE POSTED ON ECAMPUS)

REQUIRED CALCULATOR FOR EXAMS: Sharp EL-501X Scientific Calculator or TI 30X series; both available in bookstore, Amazon, Wal-Mart, etc. for under $10

Questions: If you have any questions regarding the lecture, please contact your Lecture Instructor in class or via email. For questions about the laboratory or specific experiments, e-mail your TA.

LEARNING OUTCOMES
Chem 119 is an introduction to the basics of chemistry and will not only support your future chemistry courses, but also biology, oceanography, geology, animal science, engineering... you get the picture. I will make every attempt to find something for everyone at least once! By semester end, you will be able to:

- Define chemical and physical properties of matter
- Differentiate between physical and chemical change
- Predict whether a system will undergo physical or chemical change
- Describe the fundamental properties of the atom
- Predict the behavior of atoms based on their position in the periodic table
- Solve stoichiometric problems including balancing equations and determining limiting reactants and yields
- Recognize the nature of chemical bonds and the relationship to molecular structure
- Describe the behavior of gases as defined by the laws which govern them. Apply knowledge of gas laws and stoichiometry to problems presented in gaseous systems
- Classify reactions which take place in solutions
- Compare liquid and solid states of matter
- Identify properties of solutions
- Analyze a given problem, determine which concepts apply to the problem, and successfully solve the problem
- Work effectively with others to produce a written, oral, and visual presentation on a topic pertaining to chemistry and the world around us.

EXAM SCHEDULE (Subject to slight modification)
September 16th 6:30-8:00 pm; Exam 1 (Chapters 1,2-PART)
October 21st 6:30-8:00 pm; Exam 2 (Chapters 3,4,5)
November 18th 6:30-8:00 pm; Exam 3 (Chapters 6,7,8)
Final Exam Comprehensive (through Chapter 9) : TBA
Sapling homework problems will be assigned with each chapter.
GRADING POLICY

Final Course Grade:

<table>
<thead>
<tr>
<th>Component</th>
<th>Percentage</th>
</tr>
</thead>
<tbody>
<tr>
<td>Lecture</td>
<td>75%</td>
</tr>
<tr>
<td>Lab</td>
<td>25%</td>
</tr>
</tbody>
</table>

GRADE DISTRIBUTION

<table>
<thead>
<tr>
<th>Grade</th>
<th>Score Range</th>
</tr>
</thead>
<tbody>
<tr>
<td>A</td>
<td>90-100</td>
</tr>
<tr>
<td>B</td>
<td>80-89</td>
</tr>
<tr>
<td>C</td>
<td>70-79</td>
</tr>
<tr>
<td>D</td>
<td>56-69</td>
</tr>
<tr>
<td>F</td>
<td>&lt;56</td>
</tr>
</tbody>
</table>

Lecture Grade Policy

<table>
<thead>
<tr>
<th>Component</th>
<th>Percentage</th>
</tr>
</thead>
<tbody>
<tr>
<td>3 Exams</td>
<td>45%</td>
</tr>
<tr>
<td>Final Exam</td>
<td>20%</td>
</tr>
<tr>
<td>Sapling Homework</td>
<td>10%</td>
</tr>
<tr>
<td>EYK Group Project</td>
<td>15%</td>
</tr>
<tr>
<td>In class assignments (usually Reef Poll)</td>
<td>10%</td>
</tr>
<tr>
<td>Recitation (one session/week)</td>
<td></td>
</tr>
<tr>
<td>Grade earned in recitation may be substituted for one regular exam grade</td>
<td></td>
</tr>
<tr>
<td>Pop Up Points(PUPs)</td>
<td></td>
</tr>
<tr>
<td>Optional points randomly available through eCampus. This is your own personal curve.</td>
<td></td>
</tr>
</tbody>
</table>

Exams are administered on Monday evenings. This was built into your schedule and there should be no conflicts. They will be multiple choice, True/False and free response. The makeup exam will NOT be the same as the exam you missed. Exams will be closed book, closed notes. You must use the calculator specified for the course, or its equivalent. No programmable calculators, no cell phones. No APPLE WATCHES.

Make up exams must be scheduled and taken within a reasonable amount of time after missing the scheduled exam and you must provide an absence form found on eCampus.
**Extend Your Knowledge** is a project designed to use chemistry concepts to analyze and/or critique current topics and news events. It consists of multiple deliverables throughout the semester. Details will be presented the first week of class.

**Homework** is administered through Sapling Learning. There is one assignment per chapter covered in lecture plus two supplemental sets. You will need to sign up for Sapling online and there is a nominal fee. Homework sets will close at 5:00 PM on the exam day this topic is covered. *The first Sapling assignment will close earlier than the first exam date. Note: These will not reopen.*

**In Class Assignments** are designed to check comprehension and understanding IN CLASS. The grading scale allows for limited wifi issues, dead devices, absences. There are no makeups. You may not poll from anywhere but the classroom and attempts to do so will be considered a violation of the Aggie Honor Code and treated as such. Your in class assignment grade will be determined as follows:

<table>
<thead>
<tr>
<th>In Class Assignments</th>
<th>Grade</th>
</tr>
</thead>
<tbody>
<tr>
<td>80-100%</td>
<td>100</td>
</tr>
<tr>
<td>70-79%</td>
<td>90</td>
</tr>
<tr>
<td>60-69%</td>
<td>80</td>
</tr>
<tr>
<td>50-59%</td>
<td>70</td>
</tr>
<tr>
<td>40-49%</td>
<td>60</td>
</tr>
<tr>
<td>30-39%</td>
<td>50</td>
</tr>
<tr>
<td>20-29%</td>
<td>40</td>
</tr>
<tr>
<td>10-19%</td>
<td>30</td>
</tr>
<tr>
<td>&lt;10%</td>
<td>Percentage earned = grade</td>
</tr>
</tbody>
</table>

**Recitation** There will be two duplicate recitation sessions offered per week. *You need only attend one each week.* Recitations are taught by the faculty who teach general chemistry and a recitation coach. Supplemental assignments and instruction will be done in recitation. The grade you earn in recitation may be substituted for one regular exam grade. While not required it is highly recommended you attend. If your class schedule prevents you from attending either of the scheduled recitations, bring your schedule to your instructor so that we can work to accommodate the conflict. We can only do this for a class conflict.

Recitation for this course is offered:
Monday evening from 6:30-7:30 and
Tuesday evening from 6:30-7:30
Location MAIN 114

**eCampus** is an integral part of this course. You will find supplemental information, course calendar, links to Sapling and much more. Access through the Howdy Portal.

Cell phones, tablets, and laptops will be used for Reef Polling in class and occasionally other tasks. Please be courteous to your peers and refrain from using these devices for other purposes during class.
This class may be recorded for private use and purposes.

**Americans with Disabilities Act (ADA) Policy Statement**
The Americans with Disabilities Act (ADA) is a federal anti-discrimination statute that provides comprehensive civil rights protection for persons with disabilities. Among other things, this legislation requires that all students with disabilities be guaranteed a learning environment that provides for reasonable accommodation of their disabilities. If you believe you have a disability requiring an accommodation, please contact the Counseling Office, Seibel Student Center, or call (409)740-4587. For additional information visit [http://www.tamug.edu/counsel/Disabilities.html](http://www.tamug.edu/counsel/Disabilities.html).

**Academic Integrity Statement**
"An Aggie does not lie, cheat, or steal or tolerate those who do." For many years Aggies have followed a Code of Honor: "Aggies do not lie, cheat, or steal, nor do they tolerate those who do." As such, it is the responsibility of students and faculty members to help maintain scholastic integrity at the University by refusing to participate in or tolerate scholastic dishonesty. The Aggie Code of Honor and the Scholastic Dishonesty sections in the TAMUG University Rules handbook will be the standard upon which scholastic integrity is maintained in this course. See [http://www.tamug.edu/honorsystem/](http://www.tamug.edu/honorsystem/) Academic dishonesty infractions will result in failure of this course as a minimum sanction.

**Absences**
Information concerning absences is contained in the University Student Rules Section 7. The University views class attendance as an individual student responsibility. All students are expected to attend class and to complete all assignments. For details see: [http://www.tamug.edu/stulife/Academic_Rules/7_Attendance.html](http://www.tamug.edu/stulife/Academic_Rules/7_Attendance.html).

**Statement on the Family Educational Rights and Privacy Act (FERPA)**
FERPA is a federal law designed to protect the privacy of educational records by limiting access to these records, to establish the right of students to inspect and review their educational records and to provide guidelines for the correction of inaccurate and misleading data through informal and formal hearings. Items that can never be identified as public information are a student’s social security number or institutional identification number, citizenship, gender, grades, GPR or class schedule. All efforts will be made in this class to protect your privacy and to ensure confidential treatment of information associated with or generated by your participation in the class.
Calendar

Tentative Lecture Schedule Fall 2019 (Subject to change!)

<table>
<thead>
<tr>
<th>Week of</th>
<th>Chapter:</th>
</tr>
</thead>
</table>
| August 26     | Introduction  
               Diagnostic Exam  
               Chapter 1 Chemical Laws and the atom |
| September 2   | Chapter 2 The Atom                           |
| September 9   | Chapter 2 continued; Group Projects Assigned |
| September 16  | **Exam 1**; Chapter 3 Bonding                |
| September 23  | Learning Theories and Chapter 4 Molecular Structure and orbitals |
| September 30  | Chapter 4 Continued                           |
| October 7     | Chapter 5 Stoichiometry                      |
| October 14    | Chapter 6 Types of Reactions and Stoichiometry |
| October 21    | **Exam 2**; Chapter 6 Continued               |
| October 28    | Chapter 6 complete; Begin Chapter 7 Chemical Energy |
| November 4    | Chapter 7 Chemical Energy                    |
| November 11   | Chapter 8 Gas Laws; Group Projects Due        |
| November 18   | Chapter 8 Gas Laws; **Exam 3**; Thanksgiving Break |
| November 25   | Chapter 9 Liquids and Solids                 |
| December 2    | Projects; Semester wrap up; **Final Exam TBA** |
# CHEMISTRY LABORATORY SYLLABUS
## FALL 2019
### MAIN 306
### EXPERIMENT SCHEDULE

<table>
<thead>
<tr>
<th>Week #</th>
<th>Experiment Title</th>
<th>Sapling Assigned</th>
<th>Sapling Due</th>
<th>Assignment Due</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>AUG 26</td>
<td>No Labs</td>
<td></td>
<td></td>
</tr>
<tr>
<td>2</td>
<td>SEPT 2</td>
<td>Introduction to Lab Intro Experiment - Investigation of a Superabsorbent polymer; Scavenger Hunt</td>
<td>Safety Quiz; Salinity</td>
<td>Investigation of a Superabsorbent polymer; Scavenger Hunt</td>
</tr>
<tr>
<td>3</td>
<td>SEPT 9</td>
<td>Salinity Study</td>
<td>Laboratory Operations Quiz</td>
<td>Safety Quiz; Salinity</td>
</tr>
<tr>
<td>4</td>
<td>SEPT 16</td>
<td>Boat Trip: Meet at Boat Basin at your designated lab time. We WILL travel in rain, but may be deterred for Wind or Lightning. Please check your email for updates from your TA if weather looks questionable.</td>
<td>Laboratory Operations Quiz</td>
<td>Boat Trip Sample Sheets</td>
</tr>
<tr>
<td>5</td>
<td>SEPT 23</td>
<td>Salinity Study – Data Analysis</td>
<td>Chemical and Physical Properties</td>
<td>Salinity Study</td>
</tr>
<tr>
<td>6</td>
<td>SEPT 30</td>
<td>Chemical/Physical Properties</td>
<td>Chemical and Physical Properties</td>
<td>Chemical and Physical Properties</td>
</tr>
<tr>
<td>7</td>
<td>OCT 7</td>
<td>Exchange Reactions</td>
<td>Balloon Races</td>
<td>Exchange Reactions</td>
</tr>
<tr>
<td>8</td>
<td>OCT 14</td>
<td>Molar Ratios (Balloon Race)</td>
<td>Thermochemistry</td>
<td>Balloon Races</td>
</tr>
<tr>
<td>9</td>
<td>OCT 21</td>
<td>Thermochemistry/Heat Transfer</td>
<td>Paint Pigments</td>
<td>Thermochemistry</td>
</tr>
<tr>
<td>10</td>
<td>OCT 28</td>
<td>Paint Pigment Part 1</td>
<td>Paint Pigments</td>
<td>Intro Due Friday November 9th</td>
</tr>
<tr>
<td>11</td>
<td>NOV 4</td>
<td>Paint Pigment Part 2</td>
<td>Gas Laws</td>
<td>Intro Due Friday November 9th</td>
</tr>
<tr>
<td>12</td>
<td>NOV 11</td>
<td>Gas Laws</td>
<td>Final Review</td>
<td>Gas Laws</td>
</tr>
<tr>
<td>13</td>
<td>NOV 18</td>
<td>Make-up Labs</td>
<td>Final Review</td>
<td>Formal Report Due</td>
</tr>
<tr>
<td>14</td>
<td>NOV 25</td>
<td>Final Exam</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

**LEARNING OUTCOMES:**

*By semester end you will be able to:*

- Demonstrate basic lab skills and techniques
• Practice safety procedures in the chemical lab
• Handle chemicals safely and know how to use common laboratory equipment
• Perform qualitative/quantitative analysis
• Record measurements, collect experimental data and analyze them
• Carry out chemical reactions
• Apply written experimental procedures to the bench top independently

REQUIRED MATERIALS
• Sapling Learning online homework assignments (Note: This is a SEPARATE purchase from the lecture. If you are enrolled in the lab AND lecture, you will need to buy Sapling for BOTH.
• Chemical splash goggles (fully enclosing goggles with four indirect vents) are required. These are the ONLY approved form of eye protection. No other goggles or safety glasses will be allowed.
• Tennis Shoes or boots. Footwear must cover and protect your ENTIRE foot, up to the ankle.
• Laboratory notebook (8 1/2 x 11, perforated pages with carbonless copying paper).
• Calculator (note: a cell phone is not a calculator)

SAFETY:
• Any student who does not view the safety video and pass the safety quiz will not be permitted to participate in lab until this is completed.

• SAFETY GLASSES MUST BE WORN AT ALL TIMES.
  After initial class, you will be dismissed from class if you do not come prepared.
• No eating or drinking in the laboratory. Smoking is prohibited in all campus buildings.
• Dress defensively:
  Exposed skin is susceptible to injury by splattering of hot or caustic solution. Normal clothing provides partial protection against these hazards if the skin is covered. The TAMU/TAMUG Safety Office requires Chemistry Lab students to wear long sleeved shirts that cover the chest and long pants to the ankle. No part of the foot or lower leg may be exposed. Shoes must completely protect the entire foot. Wear sensible clothing that will be no great loss if damaged. You may wish to purchase a lab coat as a secondary layer of protection.
• Long sleeves and long pants are required to be worn at all times
• Clothing must be loose fitting and not form-fitting
• Long hair must be tied back.
• Follow experimental procedures.
• Do not enter lab unless your instructor is present.

If you do not comply with the attire rules, you will be asked to leave the lab to get appropriate clothing. If you do not make it back in time to complete the lab, you will receive a zero for that particular lab. You will not be allowed to attend class without your safety goggles, proper attire and shoes, and a written pre-lab in your notebook!
*Note: PPE and calculators are available for checkout from the chemistry stockroom at a POINT COST. Safety and Preparedness are part of any lab exercise. 5 points will be deducted from your total points for EACH checkout from the stockroom.

**ACCIDENTS AND OTHER INCIDENTS:**
Any illness or injury incurred in the laboratory must be brought to the attention of your Instructor or Laboratory Coordinator. In the event of serious injury, 9-1-1 will be contacted by the Lab Coordinator or Instructor and the situation will be assessed by the responding EMT team. Because students are not eligible for workers compensation, the cost of any care not provided by the UTMB Health Center as part of the student Health Fees must be covered by the student's personal health insurance plan.

**GRADING POLICY:**
In order to receive a grade for your work, you must be present for the experiment. No exceptions.

<table>
<thead>
<tr>
<th>ASSIGNMENTS</th>
<th>POINT VALUE</th>
<th>TOTAL POINTS</th>
</tr>
</thead>
<tbody>
<tr>
<td>Sapling Homework</td>
<td>10 pts each</td>
<td>90</td>
</tr>
<tr>
<td>Pre-Lab Notebook</td>
<td>10 pts each</td>
<td>100</td>
</tr>
<tr>
<td>Report Sheets</td>
<td>10 pts each</td>
<td>80</td>
</tr>
<tr>
<td>Formal Report</td>
<td>65 pts</td>
<td>65</td>
</tr>
<tr>
<td>Formal Report - Introduction</td>
<td>10 pts</td>
<td>10</td>
</tr>
<tr>
<td>Safety and Honor Code</td>
<td>15 pts</td>
<td>15</td>
</tr>
<tr>
<td>Final Exam</td>
<td>100 pts</td>
<td>100</td>
</tr>
<tr>
<td>Lab RAT and Clean-up</td>
<td>10 pts</td>
<td>10</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td></td>
<td>***480</td>
</tr>
</tbody>
</table>

The sum of all graded submissions is the TOTAL POINTS possible for the semester. Your grade will be determined by tallying your total points (less penalty point deductions) and dividing your total points by the total possible points.

Please note the lab coordinator reviews all grades and may make minor adjustments for differences in TA grading habits. Final grade assignments will not be released to students by the TAs or the Lab Coordinator. Students will learn their final grades in the course after they are released by the University.

*** 10% of each assignment’s point value will be reserved for overall presentation. This includes neatness, legibility, spelling, grammar, proper use of tables, formatting, etc.

*** Total number of assignments may change over the course of the semester if necessary
*** Failure to arrive to lab prepared for proper lab safety as per the Chemistry Lab Safety Agreement, OR, failure to comply by the Aggie Code of Honor will result in the deduction of points from your final grade.

***Late work penalties and policy discussed below

**EXPERIMENTS AND ASSIGNMENTS**

**Where do I find them?**
All procedures are located in Lab Central on eCampus under the specified lab modules. You will be expected to use eCampus for this course. This is where all assignments, changes in procedure, and most current information regarding chemistry labs will be posted. Access through the HOWDY portal and go to the eCampus tab. There should be two sites for chemistry lab. One is labeled Lab Central, the other Lab Section. Lab Central is common to all sections and has non-section specific information. The second site is section specific, where you will find your grades and information specific to your class. If you change sections, notify your instructor and watch for the change on Howdy.

**LABORATORY ASSIGNMENTS**
A working notebook will be kept for each lab and must be current. Some labs will have a report sheet due the following session, but the majority will be due by the end of the lab in which it was assigned. The report sheets are 10 points each. Clear, neat and accurate record keeping is important in every line of work. No less is expected in this course. All work turned in must reflect this. **Points will be deducted for work that is illegible, incomplete, poorly labeled, or not spell checked.**

**REPORT SHEETS**
All report sheets can be found under the eCampus Lab Central. All answers must be typed and answered in complete sentences. Most report sheets are due at the end of the class in which they were assigned following the completion of the experiment and must be submitted electronically under your Lab Section in eCampus (see Assignment Submissions section of syllabus).

**FORMAL REPORT**
The required template will be provided for you on eCampus in the “Tutorials & References” section. An example formal report can be found on eCampus—resources. All formal reports must be submitted in hard copy by the due date and uploaded to TurnItIn.com before the class when it is due. Use formal scientific journal articles as a model. It is required that you attend the writing lab in order to review your formal report.

**FINAL EXAM**
The final exam MUST be taken to pass this class. It is a lab practical and is the best way for us to assess your readiness for the next level of lab.

**NOTEBOOK:**
A working lab notebook will be kept for this lab. The notebook format is the same as expected for a working lab notebook in a commercial or academic research environment. This means your experimental work can be duplicated at any time, based on your records. It is important for reviewers to understand your data, procedures, reasons for doing things, and also know of any potential hazards in the experiment. All sections MUST be completed prior to lab, except the final section (results, observations, and calculations) which will be completed during class. Points will be deducted for coming unprepared.

*Note: You may not work without a written procedure.* This is a safety issue - there will be NO exceptions. Your instructor will initial your completed pre-lab within the first 30 minutes of the
lab period. If for any reason, your work has not been checked by this time, it is your responsibility to see that it is done. A notebook that is not signed will be considered incomplete and points deducted accordingly. Credit will not be given for content added after your notebook has been signed (except for the final section). You may not stay late to update a notebook. An example notebook write-up can be found on eCampus Lab Central – Resources. Points will be deducted for illegible and messy notebook pre-lab submissions.

Be sure to include the following in your Pre-Lab: (Points may be lost for illegible Pre-Labs)

1. **HEADING** (1 PT)
   a. Title and Date of experiment. Include your name, course, and section number.

2. **OBJECTIVES** (1 PT)
   a. Brief statement(s) summarizing objectives of experiment in your own words.
      i. May be bulleted or complete sentences

3. **CLASS NOTES** (2 PTS)
   All notes from prelab lecture go here. Most questions that arise during lab will be answered during the lecture. Take good notes! Leave the entire page under the title and purpose blank for notes. Complete the rest of the pre-lab on the subsequent pages.

4. **Balanced Stoichiometric Equations** (1 PT)
   Show all balanced equations for the reactions in the experiment. Be sure to include states. (If there is no reaction occurring e.g. for physical changes, this may be omitted.)

5. **TABLE OF REAGENTS** (2 PTS)
   a. Table format
   b. Include all chemicals used in the lab
      i. Chemical Name
      ii. Chemical Formula
      iii. Formula Weight (of solute if Molar Solution)
      iv. Physical state as used in the experiment
         1. (s) solid
         2. (l) liquid
         3. (g) gas
         4. (aq) aqueous solution (used for molar solutions)

<table>
<thead>
<tr>
<th>Chemical Name</th>
<th>Chemical Formula</th>
<th>FW (g/mol)</th>
<th>State (s), (l), (g), (aq)</th>
<th>Molar Concentration (mol/L)</th>
<th>Safety</th>
</tr>
</thead>
<tbody>
<tr>
<td>Hydrochloric acid</td>
<td>HCl</td>
<td>36.5</td>
<td>aq</td>
<td>0.1 M</td>
<td>Health- 3 Flammability-0 Reactivity-1</td>
</tr>
<tr>
<td>Sodium Hydroxide</td>
<td>NaOH</td>
<td>39.997</td>
<td>aq</td>
<td>0.6 M</td>
<td>Health- 3 Flammable-0 Contact - 1</td>
</tr>
</tbody>
</table>

- List all reagents/reactants used in the experiment.
- Include any safety/hazard information.
6. **PROCEDURE (2 PTS)**
   a. Write out on left side of page, in your own words, an abbreviated, step-by-step procedure so you can perform the experiment based on the documents posted on eCampus. Write using your own words!
   b. Be thorough enough so you can work alone during lab.
   c. You may only use your lab notebook with the handwritten procedure at the bench; no printed procedure sheets!
   d. You will NOT be allowed to reference the eCampus document during the experiment!

7. **RESULTS, OBSERVATIONS, CALCULATIONS (1 PTS)**
   a. Record on the right side of the page
   b. Use this section to record all of your data, calculations, observations and results.
   c. A table is highly recommended.
   d. Include Calculations and show your work (all calculations should be in your notebook)
   e. Use significant figures.
   f. Label all units.
   g. Note exact measurements reagents in order to obtain accurate yield calculations
   h. The Report Sheet may be helpful for identifying what data needs to be collected.

**ASSIGNMENT SUBMISSION:**
All report sheets, dry labs, and homework (with the exception of pre-lab notebooks) will be turned in electronically via the eCampus lab section portal. Assignments will be time-stamped by the system and late work will be graded according to the Late Work Policy outlined in this syllabus. Students are responsible for making sure assignments are submitted in the correct format by the specified due date. Students are also responsible for reporting any technical issues experienced and will still be held accountable for turning in assignments on time. Any questions, concerns, or difficulties should be reported to the instructor.

Note: Photographs or snapshots of handwritten calculations and/or notes is not acceptable in the submission of any report sheets, assignments, or formal lab reports. All calculations are to be typed out using your word processing program of choice.

**ELECTRONIC COMMUNICATION AND CONDUCT:**
All electronic communication with your Instructor and/or the Laboratory Coordinator must be conducted from a TAMU/TAMUG email account. Emails sent to university email addresses are a permanent document of communication. Therefore, be sure that your emails are polite, professional and well prepared before you send them. **All emails should include the student’s first and last name, UIN, and the course and section number. FAILURE TO FOLLOW THIS FORMAT WILL RESULT IN THE UNANSWERED RETURN OF YOUR EMAIL.**

Students are responsible for checking their TAMU email on a regular basis to receive messages regarding the laboratory course. Inappropriate language and/or disruptive behavior can result in loss of credit at the discretion of the Instructor or Laboratory Coordinator and/or reported to the Galveston Aggie Student Conduct Office.

**STUDENT WORK AREAS AND SHARED CLEANUP/LAB RAT DUTIES:**
Students are expected to clean up all spills immediately. Ask for help if needed. Special care should be taken to keep the area around the balances free of spills. Each week, each bench will be assigned a series of cleanup jobs. End of class duties include making sure the counters and balances are clean, equipment has been put away, etc. If everyone cleans up after themselves, this should be a very easy task. All students are expected to participate in clean up duties. Clean up is worth 10 points of your grade. You will start with 10 points and lose them if you leave the lab without assisting with your bench’s clean up job. You should check in with your instructor before you leave. Students will be asked to complete LabRAT (Laboratory Risk Assessment Tool) forms with teams to evaluate the class’s safety performance.

LABORATORY EQUIPMENT
You will be assigned an equipment drawer on the first day of lab. You are responsible for recording your drawer assignments and using ONLY your assigned drawers in lab. If drawers are missing equipment at the end of the semester or equipment is not properly cleaned, 1 point per improperly returned piece of equipment will be deducted from your lab notebook grade for that week.

POLICY ON CELL PHONES:
Remember to use basic phone etiquette during class (and some common sense as well). It is a safety hazard to multitask. However, with the increasing sophistication of cell phones, there are times in lab when it is convenient to have one available. There are a number of excellent chemistry apps. Your TA will tell you when it is appropriate to have your cell phone out. Otherwise - PACK IT UP! Remember, even a waterproof case will not protect against chemical spills; use phones at your own risk. Cell phones may NOT be used during quizzes or exams. If you are using your phone for anything non-chemistry related, you will be asked to put it away.

POLICY ON LATE WORK:
The following deductions will apply for all late work. You are responsible for checking the syllabus to determine when assignments are due and making sure to submit them, and checking your grades on eCampus to see if you have a “0”.

- 24 hours after end of lab: 25% deduction
- 48 hours after end of lab: 50% deduction
- 72 hours after end of lab: 75% deduction
- >72 hours after end of lab: not accepted, 0

POLICY ON ABSENCES:
All students with University-approved excused absences, as defined by Student Rule 7 (see http://student-rules.tamu.edu/rule07), will be allowed to make up missed laboratory work. In cases where advanced notice of an approved absence cannot be given, students must contact the instructor or the lab coordinator by the end of the second working day after the end of the absence.

- All excused absences from lab and make-up lab requests must be reported to and processed by the lab coordinator. Your TA does not have the authority to approve a request for a make-up lab or to schedule a make-up experiment.
- An absence for a non-acute medical service (such as a routine doctor’s appointment) does not constitute an excused absence.

Missing lab for not having goggles, a completed prelab, or other required safety attire is not an excused absence. We are under no obligation to allow make-up opportunities for unexcused absences. Notify your lab instructor by email AND fill out the makeup lab form through the link on eCampus. This routes to the lab coordinator who will either place you in a makeup lab or deny your request.
Information concerning absences is contained in the University Student Rules Section 7. The University views class attendance as an individual student responsibility. All students are expected to attend class and to complete all assignments.

For details see:
http://student-rules.tamu.edu/rule07

It is sometimes possible to attend another section during the same week with written permission from your Instructor, the Instructor of the class you will be visiting, and the Chemistry Lab Director. There are two required forms, available for download on eCampus.

One make-up lab will be offered at the end of the semester for university excused absences. You must have the online request completed and on file two weeks prior to the make-up lab. Absences beyond two will not be made up, and will be graded as zeroes. Labs move at a rapid pace and frequently build on prior experiments; therefore it is recommended you consider dropping the course if more than two classes are missed. Unexcused absences will be given a grade of zero. You must be present to receive credit for the experiment. This includes multi-week experiments.

STATEMENT ON THE AMERICAN WITH DISABILITIES ACT:
The American Disabilities Act (ADA) is a federal anti-discrimination statute that provides comprehensive civil rights protection for persons with disabilities. Among other things, this legislation requires that all students with disabilities be guaranteed a learning environment that provides for reasonable accommodation of their disabilities. If you believe you have a disability requiring an accommodation, please contact the Counseling Office, Seibel Student Center, or call (409)740-4587.

For additional information visit: http://www.tamug.edu/counsel/services/dssprocedures.htm