Instructor Information

Instructor: Diane Quern  
Office: 233 (Adjunct Offices)  
Mailbox: N/A  
Hours: M 9:30-11:30  
Phone: N/A  
Email: dquern@uaptc.edu

*All emails and telephone calls will receive a response within two business days.

Chair: Thomas Russell  
Dean: Marcio Bryant-Howe, Phd  
Phone: 501-812-2705  
Email: trussell@uaptc.edu  
mbryanhow@uaptc.edu

*If your emails and telephone calls do not receive a response within two business days, the appropriate chain of command is above.

Course Information

This is a sixteen week course that will include 3 lecture hours and 2 lab hours. Labs are required and used to reinforce the subject matter learned in lecture. (4 credit hours/special course fee) The meet times are as follows:

Fundamental Chemistry I: South Campus  
Lecture: Tuesday and Thursday 10:50-12:05, room #213  
Lab: Tuesday 12:10 – 2:00, room #211

Catalog Description

CHEM 1403. Fundamental Chemistry I  
ACTS # CHEM 1214

This course focuses on basic principles, theories, and laboratory practices used in chemistry. This course is algebra based and is specifically designed for majors in health-related professions such as nursing, dental hygiene, or respiratory therapy. This course is not appropriate for science majors or other pre-professional students. Topics included will be scientific measurements and conversions, atomic structure, the periodic table, ionic and covalent bonding, inorganic nomenclature, chemical reactions, stoichiometry, gas laws, solutions, acids and bases, equilibria, reaction energy, identifying oxidation-reduction reactions and nuclear chemistry. The laboratory portion of this course is designed to reinforce concepts from lecture as well as to introduce each student to a variety of different laboratory techniques. (3 lecture hours/2 laboratory hours per week)
Prerequisite: MATH 1302 with a grade of “C” or better.

Course Materials

Required textbooks:


Fundamental Chemistry I (CHEM 1403) Laboratory Manual and Data Book, Pulaski Tech Bookstore

Required materials: Scientific calculator (TI 30, TI 83, or TI 84) and splash proof goggles

Mission Statement

University of Arkansas – Pulaski Technical College provides access to high-quality education that promotes student learning and enables individuals to develop to their fullest potential.

Institutional Learning Outcomes and General Education

UA-PTC supports a college-wide institutional learning assessment program which concerns effective instructional methods and promotes student learning achievement by assessing:

1. Communication
2. Critical Thinking
3. Cultural Awareness
4. Information Literacy
5. Professionalism
6. Quantitative Literacy
7. Technology Literacy

For more information, please consult the following website: https://uaptc.edu/sla

Department / Program Learning Outcomes

The Physical Science department, consistent with the College’s mission and the Division’s objectives, encourages the success of its students in the health related fields and academic disciplines emphasizing Critical Thinking and Quantitative Literacy by the following program outcomes:

1. The student will realize the definition of the specific discipline under study.
2. The student will assign and demonstrate the use of significant figures in numbers used in calculations resulting in values and units dictated by the rules of significant figures.
3. The student will begin with measurement values and units and make unit conversions between the Metric and American systems.

4. The student will build a pictorial and mental model of the chemical elements based on their internal and external structure.

5. The student will generate the appropriate electron configuration in both neutral and charged elements for use in making compounds.

6. The student will apply the rules of naming compounds to include ionic, covalent, acids, and bases.

7. The student will utilize the attractive properties of elements and ions in the formation of both the ionic and covalent bond.

8. The student will arrange both ionic and covalent compounds and some elements in the appropriate form of a balanced chemical equation.

9. The student will apply the mole concept to the balanced chemical equation to calculate the amounts of substances that are involved during a chemical change.

**Student Learning / Course Outcomes**

This course and its textbook are based upon the recommendations of the Task Force on the General Chemistry Curriculum in the Division of Chemical Education of the American Chemical Society. This course also complies with the Arkansas Statewide Transfer Index Peer Review for Chemistry I for Health Related Professions. Nomenclature, atomic and molecular structure, bonding and reactions are explored. Lab is required.

Upon completion of this course, the student should be able to:

1. Work comfortably with conversions that are common in scientific study. These will include temperature conversions, metric-American conversions, and metric pre-fix conversions.

2. Be able to work successfully with significant digits and round all calculations to the correct accuracy.

3. Define and recognize chemical and physical properties; define elements and compounds; understand the distinction between atoms, elements, ions, and isotopes; be aware of the structure and patterns of the Periodic Table.

4. Understand the modern model of the atom and be able to predict electron configurations based on a working knowledge of orbitals.

5. Understand chemical formulas as representations of compounds. Understand the bonding, naming, structure, and physical properties of ionic and covalent compounds.

6. Define valence electrons. Write Lewis structures; understand bond angles and electronegativity. Define, recognize, and distinguish polar bonds and polar molecules; predict the geometry of molecules using the VSEPR Theory.
7. Understand the concept of a mole and its relation to atomic and molecular mass. Convert grams to moles, moles to atoms and or molecules and be able to reverse the process.

8. Understand, balance, and classify major types of chemical reactions, including single replacement, double replacement, combustion, and oxidation-reduction reactions. Perform stoichiometric calculations based upon chemical reactions; understand and perform calculations with limiting reactants. Predict products of single and double displacement and combustion reactions and identify oxidized and reduced substances. Predict the energy exchanged in chemical reactions.

9. Comprehend the major variables when dealing with gases and how they relate to one another. Gas laws will include Boyle’s, Charles’, Gay-Lussac’s, Combined, and Ideal.

10. Understand the role of solutions in chemistry, concentration terms, and calculations of solution concentrations in chemistry. These include Molarity, molality, percentage concentrations, ppm, ppb, and equivalents.

11. Understand the different definition of acids and bases, reactions between acids and bases, buffers, equilibrium, titration techniques, and pH, and perform calculations with these concepts.

12. Understand basic definitions, reactions, decay types, and uses of nuclear chemistry. Also understand half-life and be able to do calculations involving half-life.

Policies

Report a Complaint or Concern

UA-PTC takes very seriously complaints and concerns regarding the institution. Most complaints or concerns of a specific nature should be initiated and resolved at the campus level through normal college processes whenever possible. UA - Pulaski Technical College receives and resolves complaints using a variety of methods. To report a complaint or concern, please follow the link below.

https://www.uaptc.edu/report-a-concern-complaint

UA-PTC Attendance Policy

Education at UA-PTC requires students’ active involvement in the learning process. Thus, students are expected to attend all classes and actively engage in all learning assignments and/or opportunities provided in their classes. Class attendance should be treated as mandatory by all students as attendance will be taken by all instructors during the first two weeks of class. Additionally, a written policy on student attendance that is tied to course objectives and included in a course syllabus will be provided for each course by instructors.

Departmental Attendance Policy

Agencies granting financial assistance may be notified of the violation of the attendance policy by students receiving financial aid.
Attendance is taken starting the first day of the semester, with the exception of students who enroll after classes have started. Teachers have the right to count students as absent if they arrive late to class, leave class early, or go in and out of the classroom during class time.

**Any student who does not attend class within the first two weeks of class will be considered a “no show”**

Instructors will not be able to drop a student due to non attendance. Therefore, it is the students responsibility to drop the class if failing or receive a failing grade.

Each missed lab counts as a 0 for that lab. More than 3 missed labs will result in a 0 for the overall lab portion of the grade. You must sign in at the beginning of each Lab and Lecture. Failure to sign in at the required class/lab begin time is considered a miss. Tardiness counts as an absence. If you are more than 10 minutes late for a lab you will not be allowed to participate and will receive a zero for the day.

**Course Policies**

The UA-PTC Catalog rules and regulations will be enforced in this course at all times. Please consult the following website for more information: [https://www.uaptc.edu/catalog](https://www.uaptc.edu/catalog)

Professional behavior is required. Punctual attendance and intelligent participation are expected. Particulars as determined by the instructor are detailed in the paragraph below.

Appropriate behavior is expected for all communications, including any notes, email messages, or telephone conversations. Some guidelines for communication are included in this syllabus to help you.

**Lecture:**

The Pulaski Technical College Student Handbook rules and regulations will be enforced in this class at all times. No cell phones or pagers or other personal communication devices may be in use in the classroom. Turn off devices before entering the classroom. If your device rings, buzzes, plays music, or notifies you in any manner that you have an incoming call, you are to leave the class for the day. Personal communication devices cannot be used in lieu of calculators on exams. A student may not bring a child to lecture.

**Lab:**

Students must wear eye protection when working with laboratory chemicals. To prevent the spread of transmittable disease, it is highly recommended that students provide their own eye protection (Chemical Splash-Proof Goggles). Contact lenses are **not** eye protection. Students will not be allowed to work in lab unless the pre-lab assignment is turned in at the beginning of the laboratory class period. Students without the pre-lab assignment will be given a zero for that week’s laboratory experiment and will be required to leave the laboratory classroom. Students **may not** bring children to the laboratory portion of the course. Students may not bring items of food or drink into the laboratory classroom.
**Grading Policy**

Letter grades will be based on the following scale:

- 90 to 100%    A
- 80 to 89%    B
- 70 to 79%    C
- 60 to 69%    D
- 0 to 59%    F

The final grade in the course will be based on the weighted average of six categories with the following weights: Laboratory/Prelab Experiments (25%), Information Literacy (5%), Quizzes (10%), Homework (10%), Tests (30%), and Final exam (20%). The “percent” (not points!) of each assignment within a category will be averaged to give the pre-weighted value. Each category “percent” will then be weighted to give a contribution to the final course grade. These contributions will be summed and then divided by “100” giving the final course grade percent. A sample weighted average calculation is shown in the table below:

<table>
<thead>
<tr>
<th>Grade Scale</th>
<th>Category</th>
<th>Pre-Weighted Value</th>
<th>Weight %</th>
<th>Weighted Contribution</th>
</tr>
</thead>
<tbody>
<tr>
<td>90-100% A</td>
<td>Lab Experiments</td>
<td>93</td>
<td>25</td>
<td>2325</td>
</tr>
<tr>
<td>80-89% B</td>
<td>Information Literacy</td>
<td>96</td>
<td>5</td>
<td>480</td>
</tr>
<tr>
<td>70-79% C</td>
<td>Quizzes</td>
<td>65</td>
<td>10</td>
<td>650</td>
</tr>
<tr>
<td>60-69% D</td>
<td>Homework</td>
<td>95</td>
<td>10</td>
<td>950</td>
</tr>
<tr>
<td>&lt; 60% F</td>
<td>Tests</td>
<td>85</td>
<td>30</td>
<td>2550</td>
</tr>
<tr>
<td></td>
<td>Final Exam</td>
<td>70</td>
<td>20</td>
<td>1400</td>
</tr>
</tbody>
</table>

\[
\text{GRADE} = \frac{8355}{100} = 83.55\%
\]

B
Exams:

There will be a total of 4 exams (NOT including the final exam). Each exam is worth 7.5% of your grade. See tentative course schedule for exam dates and chapters. There are no make-up exams. The percentage on the Final will replace a missed exam or the lowest exam score (if none were missed).

Quizzes:

Quizzes will be given periodically throughout the semester via blackboard and in class. The quizzes will cover the information recently presented and will not be cumulative. Quizzes given on blackboard will be timed with only one attempt with the exception of the syllabus quiz. They will be available during the dates given in the course calendar.

Homework:

A list of homework questions are listed below. It is the student's responsibility to keep up with homework and ask questions regarding the assignments during office hours. The student should seek help from the tutoring office starting on the first day to take full advantage of these facilities. I will be available during office hours to assist with homework only after the student has attempted the assignment and has sought the appropriate tutoring. Tutor services in Rm 220. Schedules will be located outside the room. Theresa is the chemistry tutor.

Legend for Homework Assignment:

Q = Questions, E = Examples, PP = Practice Problems, CTP = Critical Thinking Problems. Those surrounded by (    ) are inside the chapter. Bold questions are at the end of the chapter. Odd numbered Question Answers are provided at the end of the book. Practice Problem Answers are provided at the end of the chapter.

Test – 1: CH 1 (bold questions give a chapter overview)

Chapter 1:

(PP1.2), Q1.52, (Q1.2), Q1.46, (Q1.4), (PP1.4), Q1.58, (Q1.8), (Q1.10), (Q1.12), Q1.80 a-e; (Q1.12), (Q1.14), (Q1.16), (PP1.6), Q1.92 a-e; Q1.94 a, b; (PP1.8), Q1.96, (PP1.10), Q1.98, Q1.116, (Q1.18), (PP1.12), Q1.122, Q1.126, (PP1.14), Q1.123, Q1.124, Q1.130, Q1.133, (PP1.16), CTP3

Test – 2: CH 2 & CH 3 (bold questions give a chapter overview)

Chapter 2:

Q2.36, (Q2.2), (PP2.2), Q2.38, (Q2.4), (Q2.6), (Q2.8), (Q2.10), (E2.4), (PP2.4), Q2.86; (PP2.5), Q2.88; (E2.6), (PP2.6), Q2.92, Q2.94, (PP2.7), Q2.102, (Q2.11), (Q2.12), (Q2.13), (Q2.14), (Q2.15), (Q2.16)

Chapter 3:
### Test – 3: VSPER theory and CH 4 (bold questions give a chapter overview)

**Chapter 4:**

<table>
<thead>
<tr>
<th>Question Numbers</th>
<th>Pages</th>
</tr>
</thead>
<tbody>
<tr>
<td>Q3.24, Q3.26, Q3.38, Q3.44, Q3.46, Q3.48, Q3.102</td>
<td>(PP3.1), (PP3.2), (PP3.3), (Q3.1), (Q3.2), (PP3.4), (PP3.3.5), (Q3.46, (PP3.6), (Q3.7), Q3.52, (PP3.8), Q3.79, (PP3.9), Q3.80, (PP3.11), Q3.84, (Q3.3), (Q3.4), (PP3.13), Q3.88, (PP3.14)</td>
</tr>
<tr>
<td>Q3.102, (PP3.15), Q3.103, (PP3.16), Q3.104</td>
<td>(Q3.1), (Q3.2), (PP3.3), (Q3.38)</td>
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</table>

### Test – 4: CH 5-8 (bold questions give a chapter overview)

**Chapter 5:**

<table>
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<th>Question Numbers</th>
<th>Pages</th>
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</thead>
<tbody>
<tr>
<td>Q3.96, Q3.7, Q3.8, Q3.9, Q3.10</td>
<td>(PP3.17), (PP3.1), (Q5.36, (PP5.2), (Q5.4, (Q5.6), (Q5.7), (Q5.8), (Q5.9), (Q5.10), (Q5.11), (Q5.12)</td>
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**Chapter 6:**

<table>
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<tr>
<th>Question Numbers</th>
<th>Pages</th>
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<tbody>
<tr>
<td>Q3.96, Q3.7, Q3.8, Q3.9, Q3.10</td>
<td>(Q6.1), (Q6.2), (Q6.3), (Q6.4), (Q6.5), (Q6.6), (PP6.1), (Q6.24, (PP6.2), (Q6.34, (PP6.3), Q6.28, (PP6.4), Q6.38, Q6.42, (PP6.5), (Q6.44, (Q6.7), (Q6.8), (PP6.8), Q6.48, (PP6.9), Q6.50, (Q6.9), (Q6.10), (PP6.10), Q6.66 a-b, (PP6.11), (Q6.82, (PP6.13), Q6.72, (Q6.11), (Q6.12), (PP6.14), Q6.94, (PP6.15), Q6.102, (PP6.16), Q6.106, (Q6.13), (Q6.14)</td>
</tr>
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**Chapter 7:**

<table>
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<th>Question Numbers</th>
<th>Pages</th>
</tr>
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<tbody>
<tr>
<td>Q7.24, Q7.1, Q7.2, (PP7.1), Q7.42, (Q7.5), (Q7.6), (PP7.3), Q7.35, (PP7.4), Q7.36, (Q7.7), (Q7.8), (PP7.5), Q7.38, (Q7.9), (Q7.10), (Q7.12), Q7.24, (PP7.6), Q7.50, (Q7.13), (Q7.14), (Q7.16), (PP7.7), Q7.78, (PP7.8), Q7.81, (Q7.18), (PP7.9), Q7.82, Q7.84, (PP7.10), Q7.86, (PP7.11), Q7.88</td>
<td></td>
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</tbody>
</table>

**Chapter 8:**

<table>
<thead>
<tr>
<th>Question Numbers</th>
<th>Pages</th>
</tr>
</thead>
<tbody>
<tr>
<td>Q8.30, (PP8.2), Q8.50, (PP8.3), Q8.52, (PP8.4), Q8.54, (PP8.5), Q8.56, (PP8.6), Q8.68, (PP8.7), Q8.63, (Q8.6), (E8.8), (PP8.8), Q8.78, Q8.88, (PP8.10), Q8.92, (Q8.7), (Q8.8), (Q8.9), (Q8.10), (Q8.11), (Q8.12), (Q8.13), (Q8.14), (Q8.16), (Q8.17), (Q8.18), (Q8.20), (Q8.21), (Q8.22)</td>
<td></td>
</tr>
</tbody>
</table>

**Chapter 9:**

TBD
Information Literacy:
Due date: October 15th in class. Hand out for guidelines will be supplied. Worth 5% of your grade.

* Instructors have one week to provide feedback and post grades for all assignments unless otherwise noted by a departmental policy that has been approved by the Dean of the School.

In an online class, eligibility for Financial Aid is based on student participation. Logging into the course does not constitute participation. For purposes of roster certification, students must complete a gradable attendance artifact.

Lab:
Pre-labs will be assigned and must be completed BEFORE coming to lab. Failure in completing the pre-lab will result in dismissal from that lab. Labs are due the following week after completing the lab unless otherwise noted.

Academic Integrity
It is expected that all students who attend UA-PTC conduct themselves in a manner appropriate for the college experience. Academic integrity is a vital component of collegiate behavior. The UA-PTC catalog states, “The gaining of knowledge and the practice of honesty go hand-in-hand.”

The catalog also states, “The responsibility and authority of initiating discipline arising from violations of the rules against dishonesty during the process of the course are vested in the instructor of that course.”

The complete Academic Integrity Policy is in the UA-PTC code of conduct.

Accommodation Policy
Services for Students with Disabilities: UA-PTC is committed to fulfilling all federal requirements as stated in the Rehabilitation Act of 1973, the Americans with Disabilities Act of 1990, and the American with Disabilities Amendments Act (ADAAA) of 2008. Accommodations are available to students who have documented disabilities. Students who request accommodations must register with the Disability Services Office (Main Campus: 501-812-2738 or South Campus: 501-812-2862) and must provide current and relevant documentation.

Students requesting accommodations should inform the instructor at the beginning of the course or as soon as accommodations are approved. It is the student’s responsibility to provide their Accommodation Letter to the instructor. Accommodations are not retroactive and will only be provided once your instructor receives the Accommodation Letter.

Student Code of Conduct
All students are expected to abide by the UA-PTC Student Code of Conduct. For the full Student Code of Conduct, access the most current version of the UA-PTC Academic Catalog.
http://uaptc.azurewebsites.net/docs/default-source/course-catalog/2017-18-academic-catalog.pdf?sfvrsn=a08a3038_2

Sexual Misconduct

No person at Pulaski Technical College will, on the basis of gender, be excluded from participation in, be denied benefits of, or be subjected to sex discrimination, sexual harassment or sexual misconduct under any education program or activity. All college administrative policies and procedures regarding sex discrimination, sexual harassment, and sexual misconduct are in compliance with Title IX. Students who feel they are victims of sexual misconduct should contact the UA-PTC Title IX Deputy Coordinator for Students:

Michelle Anderson, Director of Student Life and Leadership
Campus Center Building Room 216
501-812-2756
manderson@uaptc.edu

Course Evaluations

Students may be asked to evaluate their instructor and course near the end of the semester. These student evaluations are very important to the improvement in the quality of instruction and course materials. All results are anonymous and shared with the faculty only after the semester is over and grades have been posted.

Information Literacy

UA-PTC is committed to the Information Literacy Competency Standards for Higher Education as established by the Association of College and Research Libraries and endorsed by the National Forum on Information Literacy. Therefore, all courses will incorporate an information literacy component so that, by graduation, all students will be able to recognize the need for information, then locate, evaluate, synthesize, and communicate information in an ethical manner. Information literacy encompasses critical thinking, research, media, technology, health, business, and visual literacy skills to produce lifelong learners who can make informed decisions in the workplace and in their personal lives.

Tentative Course Schedule

<table>
<thead>
<tr>
<th>Week</th>
<th>Assignment/Activity</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Lecture – Syllabus &amp; pgs 1-8 textbook</td>
</tr>
<tr>
<td></td>
<td>Chemistry</td>
</tr>
<tr>
<td></td>
<td>Major areas of chemistry</td>
</tr>
<tr>
<td></td>
<td>Scientific method</td>
</tr>
<tr>
<td>Day</td>
<td>Lecture</td>
</tr>
<tr>
<td>-----</td>
<td>---------</td>
</tr>
<tr>
<td>1</td>
<td>Models in chemistry, States of matter, Physical/chemical prop and change</td>
</tr>
<tr>
<td>2</td>
<td>Lecture – (CH 1) pgs 8-20 textbook, Composition of matter (classification of matter), Mass length volume and time, Sig figs (with computations), Sci notation</td>
</tr>
<tr>
<td>3</td>
<td>Lecture – (CH 1) pgs 20-27 textbook, Problem solving, Converting units, Dimensional analysis, Temperature</td>
</tr>
<tr>
<td>4</td>
<td>Lecture – Review for Exam 1</td>
</tr>
<tr>
<td>5</td>
<td>Exam 1 (Chapter 1)</td>
</tr>
<tr>
<td>6</td>
<td>Lecture – (CH 2) pgs 61-75 textbook</td>
</tr>
<tr>
<td>Duration</td>
<td>Topics</td>
</tr>
<tr>
<td>----------</td>
<td>--------</td>
</tr>
</tbody>
</table>
| **7**    | **Principal energy levels, sublevels, orbitals**  
|          | **Electron configuration**  
|          | **Short-hand electron config.**  
|          | **Valence electrons**  
|          | **Octet rule**  
|          | **Ions**  
|          | **Ion formation / octet rule**  
|          | **Atomic size**  
|          | **Ionization energy**  
|          | **Electron affinity**  
|          | **Electronegativity**  
|          | **Lecture – (CH 3) pgs 83-89 textbook**  
|          | **Lewis symbols**  
|          | **Ionic / covalent bonds**  
|          | **Lab Session – Identity of a Liquid Chemical Reactions**  |
| **8**    | **Lecture – (CH 3) pgs 89-97 textbook**  
|          | **(More practice - Ionic / covalent bonds)**  
|          | **Polar covalent / electronegativity**  
|          | **Ionic compound formula / name**  
|          | **Lecture – (CH 3) pgs 97-109 textbook**  
|          | **Physical states**  
|          | **Melting/boiling pt.**  
|          | **Solutions of ionic / covalent**  
|          | **Lewis structures of molecules**  
|          | **Lewis structures of polyatomic ions**  
|          | **Lewis structures and resonance**  
|          | **Lab Session – Percent Water in a Hydrate**  |
| **9**    | **Exam 2 (Chapters 2 and 3)**  
|          | **Lecture – pgs 112-118**  
|          | **Lewis structure molecular geometry-VSEPR**  
|          | **Periodic structure relationships**  
|          | **Lewis structure and polarity**  
<p>|          | <strong>Lab Session – Molecular Geometry</strong>  |</p>
<table>
<thead>
<tr>
<th>Date</th>
<th>Lecture</th>
<th>Textbook Pages</th>
<th>Topics</th>
</tr>
</thead>
</table>
| 10   | Lecture – **pgs 127-135 textbook**  
Mole and Avogadro’s number  
Calculating atoms, moles, and mass  
Then chemical formula  
Formula mass / molar mass  
Lecture – **pgs 151-158 textbook**  
Chemical equations – use of conversion factors (mole ratio in “grams to moles, moles to moles, moles to grams”)  
Theoretical yield  
Percent yield |  
Lab Session – **Gram-Mole-Particle Conversions** |
| 11   | Lecture – **pgs 136-151 textbook/Review**  
A recipe for chemistry  
Chemical equation features  
Chemical reaction evidence  
Writing chemical equations  
Balancing chemical equations  
Classifying chemical reactions  
Chemical equations – general principles |  
Lab Session – **Chemical Reactions** |
| 12   | Exam 3 (Chapter 4 and VESPER)  
Lecture (CH 5) – **pgs 165-169 textbook**  
Measurement of a gas (barometer: mm to Hg to atm)  
Boyle’s law  
Lecture(CH 5) – **pgs 169-179 textbook**  
Charles’s law  
Combined gas law  
Avogadro’s law  
Molar volume of gas  
Ideal gas law  
Dalton’s law partial pressures |  
Lab Session – **Mole Relationships in a Chemical Reaction** |
| 13   | Lecture (CH 5) – **pgs 182-185 textbook**  
Vapor pressure (above) a liquid  
Hydrogen bonding  
Lecture (CH 6) – **pgs 194-205 textbook**  
General properties of liquid solutions |
<table>
<thead>
<tr>
<th>Day</th>
<th>Topics</th>
</tr>
</thead>
</table>
| 14  | Solubility and equilibrium  
         Solubility of gases – Henry’s law  
         Mass/ volume percent  
         Mass/mass percent  
         Parts per thousand, million, billion (food, water, air quality)  
         Molarity dilution \((M_1V_1 = M_2V_2)\)  
         Molality  
         Lecture (CH 6) – pgs 205-217 textbook  
         Vapor pressure lowering  
         Freezing point depression / boiling point elevation  
         Molality  
         Osmotic pressure, osmosis, and osmolarity  
         Electrolytes in solution  
         Lab Session – **Gas Concepts** |
| 15  |  
         Thanksgiving week (no classes) |
| 16  | Lecture (CH 8) – pgs 278-278 & 283-286 textbook  
         The buffer process |
<table>
<thead>
<tr>
<th>Date</th>
<th>Activity</th>
</tr>
</thead>
</table>
| 17   | Lecture (CH 9) – pgs 298-307 textbook  
Alpha particles  
Beta particles  
Gamma rays  
Properties of alpha, beta, gamma  
Alpha decay  
Beta decay  
Penetrating Power  
Positron emission  
Gamma production  
Predicting nuclear decay  
Nuclear structure  
Half life (No formula)  
Lecture- Review for Final |
| 18   | Final Exam (Comprehensive) – Tuesday, December 11th 10:30-12:30 |

**Final Exam Schedule:** *December 11th 10:30-12:30*

Disclaimer: This schedule is a guide for the semester. The instructor reserves the right to amend the schedule as necessary.
Course Agreement Form

Read, complete, and return to instructor:

I have read the course syllabus for Diane Querns Fundamental Chemistry I class at Pulaski Technical College, and I understand its content. I also understand the rules for the class, and I will follow and abide by these rules, including those relating to attendance, assignments, grading criteria, plagiarism, and behavior.

________________________________________
Semester

________________________________________
Date

________________________________________
Print name

________________________________________
Signature

________________________________________
UA-UA-PTC Email address

________________________________________
Telephone