Instructor Information

Instructor: Dr. Michael Julian  
Office: B Building 105F  
Mailbox: Science Building 115  
Hours: MTWR 3:00 – 4:15 p.m.  
Phone: (501) 812-2792  
Email: mjulian@uaptc.edu

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

Chair: Thomas Russell (501) 812-2705 trussell@uaptc.edu  
Dean: Marico Bryant Howe (501) 812-234 mbryanthowe@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

Fundamental Chemistry 1, CHEM 1403 - 01  
Class Times: MW 9:25 AM – 10:40 AM SciB 113  
Lab: M 12:30 PM – 2:20 PM SCIB 104  
Blackboard will be used for homework entry, resource distribution, and practice exams.

Catalog Description

This is an algebra-based chemistry course specifically designed for majors in health-related professions. The course content provides a foundation for work in health-related areas and is not appropriate for chemistry or other science majors or pre-professional students. Nomenclature, atomic and molecular structure, bonding and reactions are explored. Lab is required. (3 lecture hours/2 laboratory hours per week)

PREREQUISITE: Students enrolled in CHEM 1403 are required to have completed MATH 1302 with a grade of “C” or better.

Course Materials


Laboratory Guide for Fundamental Chemistry I, UAPTC Bookstore  
Scientific calculator (TI 30, TI 83, or TI 84)  
Laboratory 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 / Discipline or Program Learning Outcomes

1. Critical and investigative thought
2. Academic Integrity
3. Independent thinking and learning
4. Written communication on a collegiate level
5. Exposure to chemistry as a physical science
6. Recognition of the influence of scientific thought on individuals and society
7. Collaborative investigation
8. Basic mastery of scientific concepts and the demonstration of scientific skills
9. Correct use of instrumentation and equipment in chemistry and proper laboratory techniques

Student Learning / Course Outcomes

ACTS # Chem 1214

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.
Course Objectives

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

Students arriving to lab after the safety discussion for that lab have started (usually after 5-10 minutes), will not be allowed to attend that lab session.

Natural Science Department Policy:

You will be given a failing grade (F) for the course if you miss more than 25% of lab sessions regardless of your current grade. You will be given a failing grade (F) for the course if you miss more than 25% of lecture sessions regardless of your current grade.

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

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.

Cell Phones: Ultimately, it is the student’s choice to be in class. If you make the decision to attend lab/class please respect the same decision from your peers by not distracting from class with cell phone / messaging usage. Cell phone use in lab is considered unsafe laboratory
practice and is subject to the relevant penalties. Cell phone and other communication during exams will be considered Academic Dishonesty (cheating). The instructor recognizes that situations do occur that require a student’s availability by phone, please contact me prior to class/lab/exam and appropriate arrangements can be made

NOTE: A student may NOT bring a child to lecture OR lab for any reason.

Lab: Lab safety is a top priority in this class. All students will receive safety training before being allowed to attend further labs. Students found in violation of the safety practices taught in this class may face penalties including loss of points, removal from lab, failure of the class, and any other disciplinary actions deemed appropriate by the instructor. Students must wear impact / splash resistant eye protection when working with laboratory chemicals. For protection against transmitted diseases, it is highly recommended that students provide their own eye protection (Safety Goggles). Contact lenses, prescription eyeglasses, or sunglasses are not eye protection. Students will not be allowed to work in lab unless the pre-lab assignment is turned in prior to the start of the lab section unless instructed by the professor. Students may not bring items of food or drink into the laboratory.

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 course grade will be based on performance in lecture (tests, homework), laboratory and the final exam. The final exam will be comprehensive. Four concept tests and a final will be given during the semester. No make-up exams will be given. Due to safety standards, lab make-ups will not be available other than the safety lab. Prelab assignments may still be turned in for points. Exam make-ups will not be available. Students may be allowed to take an exam earlier than the scheduled time. The percentage from the final may be used to replace one exam score.
Fundamental Chemistry I – CHEM 1403
ACTS Chem1214
Course Syllabus
Spring 2019

<table>
<thead>
<tr>
<th></th>
<th>Points</th>
<th>% of Final Grade</th>
</tr>
</thead>
<tbody>
<tr>
<td>Four Exams</td>
<td>400</td>
<td>40</td>
</tr>
<tr>
<td>Homework</td>
<td>130</td>
<td>13</td>
</tr>
<tr>
<td>Inf. Literacy</td>
<td>20</td>
<td>2</td>
</tr>
<tr>
<td>Lab</td>
<td>200</td>
<td>20</td>
</tr>
<tr>
<td>Final Exam</td>
<td>200</td>
<td>20</td>
</tr>
<tr>
<td>Prelabs &amp; Safety</td>
<td>50</td>
<td>5</td>
</tr>
<tr>
<td>Total</td>
<td>1000</td>
<td>100</td>
</tr>
</tbody>
</table>

* Up to one exam replaced w/ % from final
** 1 lab score dropped

* 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.

**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 UA-PTC 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

The following course schedule details the assignments and corresponding due dates for this course. This schedule is tentative and is subject to change as necessary by the instructor.

<table>
<thead>
<tr>
<th>Week</th>
<th>Assignment</th>
<th>Points</th>
<th>Due Date</th>
<th>Learning Outcomes</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Lab: No Labs</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>2</td>
<td>Reading: p. 1-36, Lab: Metric &amp; American Conversions</td>
<td>20</td>
<td>Week 3</td>
<td>ILO 4,6,7, PLO 1,5,6,8,9, CLO 1,2,3</td>
</tr>
<tr>
<td>3</td>
<td>Problems: Odd #'s 1.19-1.133, Lab: No Labs</td>
<td>20</td>
<td>Week 4</td>
<td>ILO 2,4,6,7, PLO 1,2,5,6,7,8,9, CLO 1,2,3</td>
</tr>
<tr>
<td>4</td>
<td>Chapter 1 Homework in Blackboard, Lab: Significant Digits</td>
<td>22</td>
<td>Week 5</td>
<td>ILO 2,4,6,7, PLO 1,2,5,6,7,8,9, CLO 1,2,3</td>
</tr>
<tr>
<td>5</td>
<td>Reading: p. 44-75, Problems: Odd 2.17-2.121, Lab: Safety &amp; Laboratory Equipment</td>
<td>10</td>
<td>Week 6</td>
<td>ILO 2,4,6,7, PLO 1,2,5,6,7,8,9, CLO 1,2,3,4,5,6</td>
</tr>
<tr>
<td>6</td>
<td>Exam 1</td>
<td>100</td>
<td>In class</td>
<td></td>
</tr>
<tr>
<td>7</td>
<td>Chapter 2 Homework in Blackboard, Lab: Identity of a Liquid</td>
<td>12</td>
<td>Week 9</td>
<td>ILO 2,4,6,7, PLO 1,2,5,6,7,8,9, CLO 1,2,3,4,5,6</td>
</tr>
<tr>
<td>8</td>
<td>Reading: p. 84-120, Problems: Odd 3.13-3.111, Lab: % Water in a Hydrate</td>
<td>20</td>
<td>Week 8</td>
<td>ILO 2,4,6,7, PLO 1,2,5,6,7,8,9, CLO 1,2,3,4,5,6</td>
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<tr>
<td>9</td>
<td>Memorize: Table 3.3 (in red) &amp; Table 3.4, Chapter 3 Homework in Blackboard, Lab: Separating a Binary Mixture</td>
<td>24</td>
<td>Week 9</td>
<td>ILO 2,4,6,7, PLO 1,2,5,6,7,8,9, CLO 1-6</td>
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<tr>
<td>10</td>
<td>Reading: p. 128-159, Lab: Molecular Geometry Exam 2</td>
<td>20</td>
<td>Week 10</td>
<td>ILO 2,4,6,7, PLO 1,2,5,6,7,8,9, CLO 1-6</td>
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<tr>
<td>11</td>
<td>Problems: Odd 4.11-4.101, Lab: Gram, Mole &amp; Particle Conversions</td>
<td>20</td>
<td>Week 11</td>
<td>ILO 2,4,6,7, PLO 1,2,5,6,7,8,9, CLO 1,2,7</td>
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<tr>
<td>12</td>
<td>Chapter 4 Homework in Blackboard, Lab: Chemical Reactions</td>
<td>20</td>
<td>Week 12</td>
<td>ILO 2,4,6,7, PLO 1,2,5,6,7,8,9, CLO 1,2,7,8</td>
</tr>
<tr>
<td>Week</td>
<td>Reading</td>
<td>Problems</td>
<td>Lab</td>
<td>ILO</td>
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<tr>
<td>12</td>
<td>p. 165-187,</td>
<td>Odd 5.18-5.94,</td>
<td>Molar Relationships in Reactions</td>
<td>20</td>
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<tr>
<td>13</td>
<td>p. 194-220,</td>
<td>Odd 6.15-6.105,</td>
<td>Gas Concepts</td>
<td>20</td>
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<tr>
<td>14</td>
<td>227-244 &amp; 252-254,</td>
<td>Odd 7.19-7.97,</td>
<td>Chapters 5,6,7 in Blackboard, Acetic Acid Content of Vinegar Information Literacy Assignment</td>
<td>30</td>
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<tr>
<td>15</td>
<td>262-287,</td>
<td>Odd 8.23-8.99,</td>
<td>Chapter 8 in Blackboard, Making Solutions</td>
<td>12</td>
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<tr>
<td>16</td>
<td>298-321,</td>
<td>Odd 9.17-9.53,</td>
<td>Chapter 9 in Blackboard, Final Lab</td>
<td>10</td>
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<td></td>
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<td></td>
<td>Exam 4</td>
<td>16</td>
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<td></td>
<td>100</td>
</tr>
<tr>
<td>Final Exam</td>
<td>200</td>
<td>See Schedule or Syllabus for Date &amp; Time</td>
<td>2,4,6,7</td>
<td>1-4,7-12</td>
</tr>
</tbody>
</table>

**Course Total:** 1000

**Final Exam Schedule:** Monday, May 6, 2019 8:00 – 10:00 AM

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 Dr. Michael Julian’s Fundamental Chemistry I class at UA - 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