

College Chemistry I

CHEM 1450, CRN 27559, 28254

Course Syllabus, Spring 2017

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| Instructor: | Dr. Kristin Dooley |
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| Email: | kdooley@uca.edu |
| Website: | http://faculty.uca.edu/kdooley |
| Office Hours: | M and W 8:00-11:00 AM R 1:40 PM -2:30 PM <i>other times by appointment</i> |
| Lecture: | TR 12:15 PM -1:30 PM (Laney-Manion 104) |
| Lab: | W 11:00 AM -1:50 PM (20107) (Laney-Manion 202) Dooley F 11:00 AM -1:50 PM (20111) (Laney-Manion 206) Rivero-Castro |
| Required Text: | <i>Chemistry: A Molecular Approach</i> (3 rd Ed.) by Nivaldo Tro |
| Required Materials: | calculator, goggles. (See below for details) |
| Lab Manual: | <i>No purchased lab manual is required for this course. You will be expected to download and print lab exercises prior to each lab.</i> |

Course Description This course is required for chemistry, biology, and chemical physics majors, and for medical pre-professional tracks. This course will consist of lecture discussions as well as laboratory activities.

Prerequisite A C grade or better in high school chemistry (a full year course) with 2 units of high school algebra, or a C grade or better in CHEM 1301. Prerequisite of Math ACT of at least 21 or corequisite/prerequisite of MATH 1390.

Course Objectives The main objective in this course is to acquire a solid foundation in general chemistry by mastering skills in numerous topics that can be applied in further coursework. These topics include: chemical nomenclature, general reaction classifications, stoichiometric relationships in reactions, the interaction of energy and matter, periodic chemical and physical properties, as well as others.

Required Materials This course requires a textbook, a calculator, and goggles. I do not require you to bring your text to class, and I do not mind if you choose to share textbooks or use an online copy. A calculator should be brought to every lecture and lab period as it will be needed for participation, quizzes, lab calculations, and especially exams. Cell phone calculators will not be allowed on quizzes or exams. Calculator sharing during exams or quizzes will not be permitted. Goggles must meet the ANSI Z.87 standard for laboratory eye safety.

Grading

- This course will be graded out of a total of 1000 points possible. The specific breakdown of points is given in the following table.
- Four **Exams** will be given throughout this course. The dates of these exams can be found on the Lecture Schedule. Date changes for exams will be announced at least 1 lecture meeting in advance of the test date. **No exam scores will be dropped.**
- **Quizzes** help to ensure that you are progressing through the material at a pace that sets you up for success on the exams. There are 11 scheduled quizzes throughout the semester. Expect the quiz to include problems similar to the assigned homework. The quiz will be given during the first 10-15 minutes of lecture. **One quiz score will be dropped.**
- The **lab** for this course is meant to introduce you to experimental design and techniques and complement material covered in the course. You will receive a grade out of a possible 20 Points based on your performance at each lab meeting. More information about these assignments is explained in the lab section of the syllabus. **One lab score will be dropped.**
- **Assignments** of Chapter Problems will be given on a regular basis. Although I do not take up or grade these assignments, your quizzes will often contain a problem from the current assignment.
- The course's **final exam** will be comprehensive, and no portion of the final exam grade will be dropped.
- *Grade disputes concerning scores on specific assignments or exams should be addressed promptly. After the assignment has been returned, the student has one week to bring the problem to my attention. After that time, the grade on the assignment or exam will not be changed.*

| Point Distribution | Category: | Total Points: | |
|--------------------|---------------------|---------------------|--------------------|
| | Hourly Exams | 4 @ 100 Points Each | 400 |
| | Quizzes | 10 @ 20 Points Each | 200 |
| | Lab | 10 @ 20 Points Each | 200 |
| | Final Exam | 200 Points | 200 |
| | | TOTAL: | 1000 Points |

Grading Scale **A: 895-1000 Points** **B: 795-894** **C: 695-794** **D: 595-694** **F: <594**

Grade Posting

Most, if not all, of your graded work in this course will be returned to you. I will keep a record of the grades on Blackboard so that you may calculate your grade at any time. This is also a way for me to make sure that I have all of your grades recorded correctly. If you see a discrepancy between the grade you have on Blackboard and the grade on your returned assignment, bring the assignment to me so that I can correct the record.

Course Schedule

*This is a tentative schedule. Exam and quiz dates as well as content are subject to adjustment.

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|--|----|---|--|------|
| Jan | 12 | R | Syllabus, Chapter 1.1-1.1.5 | |
| | 17 | T | Chapter 1.6-1.8 Conversions/Density/Sig Figs | Quiz |
| | 19 | R | Finish Ch 1, Chapter 2 Atomic Theory | |
| | 24 | T | Chapter 3.2-3.7 Naming | Quiz |
| | 26 | R | Chapter 3.8-3.10 Molar Mass and Percent Mass | |
| | 31 | T | Chapter 3.11 Writing and Balancing Chemical Equations | Quiz |
| Feb | 2 | R | Exam 1: Ch 1, Ch 2, Ch 3 | |
| | 7 | T | Chapter 4.1-4.3 Stoichiometry/Limiting Reactants | |
| | 9 | R | Chapter 4.4-4.5, 4.7 Molarity/Solubility/Net Ionic Reactions | Quiz |
| | 14 | T | Chapter 4.6, 4.8 Double Displacement Reactions/ Titrations | Quiz |
| | 16 | R | Chapter 4.9 Redox Reactions | |
| | 21 | T | Wrap up Chapter 4 | Quiz |
| | 23 | R | Chapter 5.1-5.6 Gas Laws and Partial Pressure | |
| | 28 | T | Chapter 5.7 Stoichiometry and Gas Laws | Quiz |
| Mar | 2 | R | Chapter 5.8-5.10 Kinetic Molecular Theory | |
| | 7 | T | Exam 2: Ch 4, Ch 5 | |
| | 9 | R | Chapter 7.1-7.3 Light and Atomic Spectra | |
| | 14 | T | Chapter 7.4-7.6 Quantum Mechanics | Quiz |
| | 16 | R | Chapter 8.1-8.4 Electron Configuration | |
| | 21 | T | NO CLASS: SPRING BREAK | |
| | 23 | R | NO CLASS: SPRING BREAK | |
| | 28 | T | Chapter 8.5-8.9 Periodic Trends | Quiz |
| | 30 | R | Wrap up Chapter 7/8 | |
| Apr | 4 | T | Exam 3: Ch 7, Ch8 | |
| | 6 | R | Chapter 6.1-6.5 Thermodynamics and Heat | |
| | 11 | T | Chapter 6.6-6.9 Calorimetry and Enthalpy | Quiz |
| | 13 | R | Chapter 9.1-9.10 Lewis Structures (9.3,5,7,8,9 in Lab) | |
| | 18 | T | Chapter 10.1-10.7 VSEPR (10.5, 6, 7 in Lab) | Quiz |
| | 20 | R | Wrap up Chapter 9/10 | |
| | 25 | T | Exam 4: Ch 6, Ch 9, Ch 10 | |
| | 27 | R | Final Exam Review | |
| Tuesday, May 2, 11:00 AM-1:00 PM COMPREHENSIVE FINAL EXAM | | | | |

Lab Schedule

*This is a tentative schedule. Dates and content are subject to change.

| Date | | | Topic/Lab Title |
|-------|----|----|--|
| | W | F | |
| Jan | 18 | 20 | Safety/Measurements |
| | 25 | 27 | Density |
| Feb | 1 | 3 | Separation Techniques |
| | 8 | 10 | Hydrates |
| | 15 | 17 | Stoichiometry Practice Problems |
| | 22 | 24 | Types of Chemical Reactions and Equations |
| Mar | 1 | 3 | Acid/Base Titrations |
| | 8 | 10 | Gas Laws |
| | 15 | 17 | Atomic Emission and Molecular Absorption Spectra |
| | 22 | 24 | NO LAB: Spring Break |
| | 29 | 31 | Trends (Dry Lab) |
| April | 5 | 7 | Thermodynamics |
| | 12 | 14 | Molecular Geometry and Bonding |
| | 19 | 21 | Molecular Geometry and Bonding |
| | 26 | 28 | NO LAB |

Lab Participation/ Safety

You will work with at least 1 partner in lab, but it is required that each group member actively participate in each activity. Passive participation will not be tolerated.

The Chemistry Department's Safety Agreement must be completed BEFORE you will be allowed to work in the lab.

I take lab safety very seriously. For each instance of improper lab safety, 5 points will be deducted from your score on the current experiment. The most common example of this is removing goggles from your eyes onto your forehead. More about lab safety will be covered at the first lab meeting.

Lab Material

You will not need to purchase a lab manual for this course. All of the documentation you will need for each experiment can be found online in the lab materials tab of my website. You are expected to print each document in its entirety and bring the packet with you to the lab period. Lab forms should be printed one page per sheet, in Portrait orientation. Lab forms not printed correctly will not be accepted or graded.

Lab Grades

Each lab experiment will be graded out of a total of 20 points. The distribution of these points will be explained in lab, and may change on an experiment by experiment basis.

Pre-Lab Assignments

Pre-lab Assignments are due **before** the lab experiment begins unless otherwise noted in class. Late or incomplete prelabs will result in a loss of the points allotted to them. The point of a pre-lab assignment is to ensure that each student who enters the lab is prepared for the day's procedure. An unprepared student is a poor lab partner as well as a safety hazard. **If the Pre-Lab is not turned in, I may refuse to allow your participation in the day's experiment.** For some experiments, I also may replace this assignment with an alternate assignment such as a pre-lab quiz.

Due Dates Data sheets and Post-Lab assignments will be due at the beginning of the next lab meeting. For your first lab meeting, you should prepare the Pre-Lab assignment for the Measurements Lab. For the second lab meeting, you should be ready to hand in the data sheets from the Measurements Lab as well as the Pre-Lab for the Density Lab.

You will be unable to complete the data sheets and Post-Lab for a procedure that you miss. However, you should turn in your work for the previous lab within 3 days of the absence so that credit may be earned for the lab that you completed previously.

Lab Sections While under most circumstances, both lab sections will operate almost identically, the sections will be taught by different individuals. This will automatically cause differences in the mechanics of the labs. While you can expect the content of the lab sections to be the same, differences in grading, policies, due dates, etcetera will occur. Ultimate decisions in these matters will lie with your lab instructor. Please see your lab instructor first when issues or conflicts arise in lab.

**General
Classroom
Policies**

Attendance: Students who regularly miss class are rarely successful. It is the student's responsibility to obtain the information/assignments/handouts covered during an absence. An outline of the course schedule is attached to this syllabus. You should obtain specific notes from missed lectures from a classmate.

Academic Honesty: Cheating and plagiarism are not tolerated! The penalties for cheating will be severe. (See University Policies, below.)

Makeup Policy: There will be no makeup labs or quizzes given, barring an extreme circumstance. Exams will only be made up at my discretion if prior arrangements with me through email or in person as soon as you know you will miss an exam. In most cases, rather than a make-up exam, your grade on your final exam may replace the missed exam score.

Disruptions: Electronic devices should be silenced during class. Texting and other social interactions during class are disrespectful to your classmates and will not be tolerated. Students engaged in these activities will be removed from the lecture, and will not be given credit for a quiz/exam given during that lecture period. After three warnings, a student will be assigned a WF in the course.

"Snow Days" If the university closes due to weather causing us to miss class, plan to make up the exam or assignment the next class meeting after the university reopens. Expect an email from me with more details, if needed.

University Policies

Americans with Disabilities Act

The University of Central Arkansas adheres to the requirements of the Americans with Disabilities Act. If you need an accommodation under this Act due to a disability, please contact the UCA Office of Disability Services, 450-3613.

Academic Integrity

The University of Central Arkansas affirms its commitment to academic integrity and expects all members of the university community to accept shared responsibility for maintaining academic integrity. Students in this course are subject to the provisions of the university's Academic Integrity Policy, approved by the Board of Trustees as Board Policy No. 709 on February 10, 2010, and published in the Student Handbook. Penalties for academic misconduct in this course may include a failing grade on an assignment, a failing grade in the course, or any other course-related sanction the instructor determines to be appropriate. Continued enrollment in this course affirms a student's acceptance of this university policy.

Course Evaluations

Student evaluations of a course and its professor are a crucial element in helping faculty achieve excellence in the classroom and the institution in demonstrating that students are gaining knowledge. Students may evaluate courses they are taking starting on the Monday of the twelfth week of instruction through the end of finals week by logging in to myUCA and clicking on the Evals button on the top right.

Emergency Procedures

An Emergency Procedures Summary (EPS) for the building in which this class is held will be discussed during the first week of this course. EPS documents for most campus buildings are available at <http://uca.edu/mysafety/bep/>. Every student should be familiar with emergency procedures for any campus building in which he/she spends time for classes or other purposes.

Title IX Disclosure

If a student discloses an act of sexual harassment, discrimination, assault, or other sexual misconduct to a faculty member (as it relates to "student-on-student" or "employee-on-student"), the faculty member cannot maintain complete confidentiality and is required to report the act and may be required to reveal the names of the parties involved. Any allegations made by a student may or may not trigger an investigation. Each situation differs and the obligation to conduct an investigation will depend on those specific set of circumstances. The determination to conduct an investigation will be made by the Title IX Coordinator. For further information, please visit: <https://uca.edu/titleix>. *Disclosure of sexual misconduct by a third party who is not a student and/or employee is also required if the misconduct occurs when the third party is a participant in a university-sponsored program, event, or activity.

Other Policies

Students are encouraged to familiarize themselves with all policies included in the Student Handbook, particularly the Sexual Harassment Policy, and all Academic Policies.
