

# College Chemistry II, CHEM 1451, CRN 20184, 20224

## Course Syllabus, Spring 2019

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<b>Instructor:</b>	Dr. Kristin Dooley
<b>Office:</b>	Laney-Manion Hall 201C
<b>Website:</b>	<a href="http://faculty.uca.edu/kdooley">http://faculty.uca.edu/kdooley</a>
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<b>Office Hours:</b>	T: 2:45-4:00 PM, W: 8:00-10:00 AM, R: 2:45-4:00 PM Other times by appointment.
<b>Lecture:</b>	TR: 12:15 -1:30 PM, Laney 104
<b>Lab:</b>	M: 8:00 AM-10:50 AM, Laney 206 (CRN 20184) M: 11:00AM-1:50 PM ,Laney 206 (CRN 20224) Instructor: Dr. Mason Hart (Laney 203A, mhart8@uca.edu)
<b>Required Text:</b>	<i>Chemistry: A Molecular Approach</i> , 4 <sup>th</sup> ed., by: Nivaldo Tro
<b>Lab Manual:</b>	<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>

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**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 CHEM 1450 is required to take this course.

**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. Skills learned in CHEM 1450 will be applied to topics such as chemical equilibrium, thermodynamics, kinetics, electrochemistry, solution chemistry, and nuclear chemistry. These skills also include sound lab practices and techniques that will complement the topics covered in lecture.

**Grading**

- This course will be graded out of a total of 1000 points possible. There will be a total of 4 lecture exams in this course, 6 content quizzes, a Chapter 19 half-test, 11 lab experiments/activities, and a comprehensive final exam.
- **Exams** will be given as per the lecture schedule. Date changes for exams will be announced at least 1 lecture meeting in advance of the test date unless the move is due to inclement weather. **No exam scores will be dropped, but your lowest score may be replaced by your final exam score if it improves your grade. If an exam is missed, it will automatically be the score replaced by your final exam score.**
- There will be one **50 point quiz or half-test** given during this course. It will cover the Electrochemistry material covered after the fourth exam. No portion of this quiz will be dropped or replaced.
- We will also have six **30 point quizzes** based on the material covered throughout the course. These are meant to encourage you to keep up with the recommended problems and textbook reading, and should help you prepare for the types and styles of questions

you will see on exams. Your lowest score on a 30 point quiz will be dropped. The quizzes are given at the beginning of the lecture period and will usually run for about 20 minutes. Students are expected to stay for the lecture after a quiz. Unless prior arrangements are made, leaving after the quiz will result in a forfeit of the quiz points.

- **Experiments and Lab Assignments** are worth 20 points per assignment, and there will be 11 total assignments. Your lowest of the 11 lab grades will be dropped.
- The course's **final exam** will be comprehensive, and no portion of the final exam will be dropped. It is a 200 point grade. This grade scaled to 100 points will be used to replace your lowest exam grade if it is better.
- *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 question to my attention. After that time, the grade on the assignment or exam will not be changed.*

<b>Point Distribution</b>		<u>Total Points:</u>
	4 Exams: 100 Points each	400 Points
	Ch 19 Half-Test 50 Points	50 Points
	Quizzes: 30 Points each	150 Points
	10 Experiments: 20 Points each	200 Points
	Final Exam: 200 Points	200 Points
	<b>Total Points Possible:</b>	<b>1000 Points</b>

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

**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.

**Office Hours**    To use my office hours most effectively, try to identify the specific point in lecture where you got confused, the homework problem you can't solve, or the exam/quiz question you missed before you come. This will make the best use of this time. If you are not available during my office hours, set up a time when you can come. This course is fast paced, so it is imperative that you get the help you need so that you do not fall behind.

**Website/ Blackboard**    The majority of the content of this course will be located on my faculty web page at <http://faculty.uca.edu/kdooley>. This site has a course page where you will find a calendar for the course, study guides for the chapters, lecture slides, practice exams, and lab materials. Please see me if you have any issues regarding the website.

The Blackboard shell for this course can be accessed through your myUCA account. I will only post your assignment grades here. You should check these grades periodically to make sure that the grades that I have recorded for you are consistent with the grades on your assignments. Please alert me if there is a mistake. I will alter a recorded grade if you supply the original assignment in question.

**“Snow Days”** If the university closes due to weather causing us to miss an exam or quiz, plan make up the quiz or exam during the next class meeting after the university reopens. Expect an email from me with more details, especially if lab meetings are disrupted by the closure.

**Communication** Although I do check email often, the fastest way to contact me is through Remind. Remind is a free smartphone app that allows me to message you important information without the need for cell phone numbers. You can also access an account through remind.com. You may use this to contact me directly. (Although my messages can be sent to the entire class, your replies or messages will ONLY come to me.) It is usually a fast way to catch me, but please be respectful of my time and don't expect me to respond immediately on weekends or late hours. I will remove the reply functionality if this is abused.

**Classroom Policies**

**Attendance:** Students who regularly miss class are rarely successful. Excessive (>4) unexcused absences can result in a student being dropped from the course for nonattendance. This is especially likely if the student is also failing the course or has multiple missed assignments. It is the student's responsibility to obtain the information covered during an absence.

**Academic Honesty:** Cheating and plagiarism are not tolerated! The penalties for cheating will be severe with the most minor being a failing grade on the assignment/exam which will not be able to be dropped. More severe penalties will be issued when deemed appropriate by the instructor. (See University Policies, below.)

**Homework:** Homework is for your benefit, and will not taken up or graded. I have a solution manual in my office that you are welcome to use. There is also one on reserve at the library.

**Makeup Policy:** There will be no makeup exams/labs/quizzes given, barring an extreme circumstance. A missed lab or 30 point quiz will count as your low score to be dropped. If you must miss an exam or the 50 point quiz due to an extreme circumstance, you must notify me as soon as possible, and within 24 hours of the missed assignment. Valid written documentation must be provided in these circumstances, and the absence will be accommodated at the discretion of the instructor. In most cases, a missed exam grade will be the grade that is replaced by the student's final exam score scaled to 100 points.

**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 asked to leave the lecture, and will not be given credit for a quiz/exam given during that lecture period.

**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 Support 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 buildings on campus are available at <a href="http://uca.edu/mysafety/bep/">http://uca.edu/mysafety/bep/</a> . 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: <a href="https://uca.edu/titleix">https://uca.edu/titleix</a> . *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.

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## Course Schedule

\*This is a tentative schedule. Exam dates and content are subject to adjustment.

Jan	10	R	Syllabus, Review VSEPR and Polarity
	15	T	Ch 11.2-11.6: Intermolecular Forces
	17	R	Ch 11.6-11.9: Heat Curves and Phase Diagrams, <b>CHEM 1 Quiz</b>
	22	T	Ch 13.1-13.5: Solution energetics and concentration units, <b>Quiz</b>
	24	R	Ch 13.5: Concentration Units and Conversions
	29	T	Ch 13.6-13.7: Colligative Properties and Wrap-up
	31	R	<b>Exam 1: Ch 11, Ch 13</b>
Feb	5	T	Ch 14.1-14.4: Reaction Rates and Integrated Rate Laws
	7	R	Ch 14.5-14.7: Temp Effects, Reaction Mechanisms and Catalysts
	12	T	Ch 15.1-15.6: Equilibrium Constants (K), <b>Quiz</b>
	14	R	Ch 15.7 and 15.9: Le Chatelier's Principle
	19	T	Ch 15.8: ICE Charts
	21	R	Wrap-Up
	26	T	<b>Exam 2: Ch 14, Ch 15</b>
	28	R	Ch 16.1-16.6: Acids and calculating pH
Mar	5	T	Ch 16.7-16.9: Bases and Polyprotic Acids
	7	R	Ch 17.1-17.3: Buffers, <b>Quiz</b>
	12	T	Ch 17.4: Titrations and pH Curves (Strong Acid and Base Only)
	14	R	<b>Exam 3: Ch 16, Ch 17 (Part 1)</b>
	19	T	<b>SPRING BREAK!</b>
	21	R	<b>SPRING BREAK!</b>
	26	T	Ch 17.4: Weak acid and Base Titration
	28	R	Ch 17.5-17.8: $K_{sp}$ and Solubility
Apr	2	T	Ch 18.1-18.4: Entropy, <b>Quiz</b>
	4	R	Ch 18.5-18.7: Gibb's Free Energy and Spontaneity
	9	T	Ch 18.8-18.9: Nonstandard states, and Relating G and K, <b>Quiz</b>
	11	R	<b>Exam 4: Ch 17 (Part 2), Ch 18</b>
	16	T	Ch 19.1-19.5: Balancing Redox, Voltaic cells
	18	R	Ch 19.6-19.9 Nernst Eqn, Batteries, Electrolysis
	23	T	Ch 20: Nuclear Chemistry
	25	R	Final Exam Wrap-up, <b>Ch 19 Half-Test</b>
<b>Tuesday, April 30, 11:00-1:00 PM COMPREHENSIVE FINAL EXAM</b>			

# CHEM1451 Lab Guidelines/Schedule

## Lab Schedule

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

Date		Topic/Lab Title
	M	
Jan	14	Safety/Graphing Assignment (1)
	21	<b>No Lab: MLK Holiday</b>
	28	Sugar Content by Density (2)
Feb	4	Colorimetric Aspirin Determination (3)
	11	Kinetics Lab (4)
	18	LeChatelier's Principle (5)
	25	Equilibrium Constant Determination (6)
Mar	4	TBA
	11	Making Buffers (7)
	18	<b>No Lab: Spring Break</b>
	25	TBA
April	1	Weak Acid Titration (8)
	8	Determination of $K_{sp}$ (9)
	15	Thermodynamics Lab (10)
	22	Electrochemistry Lab (11)

**Lab Participation** 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.

**Lab Procedures** The procedures and handouts for the lab will be provided in electronic form via my website (<http://faculty.uca.edu/kdooley>). You are responsible for printing the handouts. Double-sided printing is perfectly acceptable; however, printing several pages per sheet is not. I will not accept labs that are sloppy, torn, or unstapled.

**Lab Grades** You will receive grades for a total of 11 Lab Experiments, each worth a total of 20 Points. One Lab grade will be dropped. Your total grade in lab makes up 200 points of your final grade. Your grade on each assignment will be divided in two parts with 5 points earned during a pre-lab quiz, and the remaining 15 points coming from your work on the data/results/post-lab pages of your lab procedure.

**Pre-Lab Quizzes** Pre-lab Quizzes will be given at the start of lab and will be timed. The time for the quiz begins promptly at the start of your lab time and cannot be made-up if missed due to late arrival to lab. Calculators may be necessary, and cell phone calculators will not be allowed. To prepare for the quiz, I expect that you have read the background and procedure sections of the lab. The questions will often be similar in nature to the questions on the printed Pre-Lab assignment included in your handout. This quiz will constitute 5 points of the 20 points possible per lab assignment.

On occasion, the Pre-lab assignment that is printed with the lab will be used as a substitution for the quiz. This substitution will be announced. When this occurs, you should complete the assignment *before* you come to lab. The assignment is due at the beginning of the lab, and late or incomplete assignments will result in a loss of the points allotted to them.

**Pre-Lab Quizzes** The point of a pre-lab assignment is to ensure that each student that enters the lab is prepared for the day's procedure. An unprepared student is a poor lab partner as well as a safety hazard in the lab. If I feel that a student is grossly underprepared for the lab, the student will be asked to leave the lab. The missed assignment will not be allowed to be made up, and will result in a zero on the assignment.

**Due Dates** The completed data sheets along with calculations and Post-Lab assignments will be due at the **start of the next lab meeting**, unless otherwise stated. Late work will not be accepted except in emergency circumstances when your work could not be turned in early. Work for a lab that you did not attend will not be accepted.

When you are absent for a lab, the previous week's work should be turned in either before the missed lab or by the following lecture period. Because labs are on Monday, if you miss a lab, turn in your work by lecture time on Tuesday. If this is not possible, other accommodations may be made if you notify me and a later due date is arranged.

**Lab Safety** 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 in the lab. Closed-toed shoes are also required. Shorts/skirts that come above the knee when sitting are not permitted in the lab. Long hair must be tied back. If at any time I feel that you are endangering yourself or others in the lab, you will be asked to leave the lab. The missed assignment will not be allowed to be made up, and will result in a zero on the assignment.

You are required to fill out the lab safety agreement found online before attending lab. Completion of this form will be a portion of your grade on the first lab assignment. After January 14, the form must be completed in order to be allowed in the lab.