

**Chemistry 1451
College Chemistry II
Spring 2017**

Instructor: Dr. Faith Yarberry
Office: Laney-Manion Annex – Rm 129
Phone: 501-852-2530
Email: fyarberry@uca.edu
Office Hours: MW 1:00-4:00 pm

Course Information:

Lecture: Laney-Manion 102 – MWF 9:00-9:50
Text: *Chemistry A Molecular Approach* (3rd Ed.) by Tro

Lab: Laney-Manion 206 T – 10:50-1:30 CRN: 23365
Laney-Manion 206 T - 8:00-10:40 CRN: 27568
Text: Labs to be printed from Blackboard

Course Item	# Given	# Dropped	# Toward Grade	Points per Item	Total Points
Lab	12	2	10	20	200
In-Class Quizzes	?	?	10	5	50
Demo Show	1	0	1	100	100
Exams	4	1	3	150	450
Final Exam	1	0	1	200	200
Total					1000

Grades: A: 900 - 1000 points B: 800-890 C: 700-790 D: 600-690 F: < 600

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.

I do not offer make-up times for any course material. Missed laboratories, assignments, and exams will be dropped up to the allotted number described above. I do not accept late assignments. Do NOT ask to reschedule the final exam it WILL NOT happen. In the case of illness, please talk to me as soon as possible for any consideration to be given.

Any grade disputes must be discussed within 2 business days with the instructor.

Course Description	College Chemistry II is a required course for chemistry, biology, chemical physics majors, and medical pre-professional tracks. More advanced principles of general chemistry are treated with emphasis on theoretical and quantitative applications.
Prerequisites	The prerequisite for this course is a C or better in CHEM 1450 (College Chemistry I)
Materials Required	Graphing Calculator Mastering Chemistry Access Goggles Textbook Printed Laboratories (On Blackboard) Signed Safety Agreement
Course Objectives	<p>Upon completion of this course, the student should have gained:</p> <ul style="list-style-type: none"> • An understanding of intermolecular forces, their impact on a substances physical properties, and their impact in solution formation • The ability to perform calculations using a variety of concentration units • An understanding of colligative properties and calculations involving colligative properties • An understanding of rate laws, the ability to determine rate laws, and the ability to perform calculations involving integrated rate laws • A working knowledge of equilibrium and LeChatlier's principle • The ability to calculate the pH of solutions containing strong acids, weak acids, strong bases, weak bases, and buffers • An understanding of the solubility constant and the ability to perform calculations containing the solubility constant • The ability to determine whether a reaction occurs in the manner described and perform calculations to confirm that understanding • The ability to work with Redox reactions as part of electrochemistry • A basic understanding of radioactivity and nuclear reactions
Attendance	<p>Each class meeting is important to the course development. Class begins at 9:00 am and ends at 9:50 am. Roll will be taken. 6 unexcused absences may result in a WP or WF grade at the instructor's discretion. It is the responsibility of the student to obtain any information covered during their absence.</p> <p>Attendance in the laboratory is mandatory. More the two absences WILL result in the student being dropped from the course with a WP or WF at the discretion of the instructor.</p>
Homework	A list of Homework problems can be found on Blackboard for each chapter. These problems <u>will not</u> be graded; however your success on timed exams will improve by completion of these homework problems. We will be working on these problems during class time, so bring your textbook to class.

In-class Quiz Quizzes will be administered periodically throughout the semester at the start of a class following announcements. Students will be given 5 minutes to complete the quiz. The quiz will cover material discussed in the previous lecture and will reflect how questions will be presented on an examination.

Exams 4-50 min exams will be administered on the dates listed in the syllabus beginning at 9:00 am. The final exam will be held May 3rd from 2:00-4:00 pm. Plan your schedule accordingly because make-up exams will NOT be offered. Missed exams will be dropped up to the allotted number.

General Information:

Office Hours This time is specifically set aside for you to ask me questions and receive help on course material. Use this time! **If you cannot make the scheduled times, make other arrangements with me.**

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.

The penalty for academic dishonesty on an exam in this course is that the student will receive a zero for that exam and the exam grade will be counted into their final average

Emergency Procedures Summary 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 <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 Information concerning University Academic Policies (such as the Sexual Harassment Policy and Academic Policies) can be found in the Student Handbook. Students should familiarize themselves with all policies listed in the Student Handbook at <http://uca.edu/ubulletin2015/general-policies-information> .

Laboratory Further Explained

Laboratory Grade - Laboratory experiments will constitute 165 points of your grade. Each lab will be graded out of 15 points. (Lab Lectures count as a single lab grade of 15 points)

Laboratory Grade	Points	When Due
Quiz	5	Given at the start of lab
Data / Results	5	Friday following the lab
Post-Laboratory	5	Friday following the lab
Participation and Safety	5	Throughout lab the First safety violation receives a warning, the second safety violation you will lose 2 points. A third violation and you will be told to leave the lab. Each student is expected to participate in a lab role. Failure to do so will constitute a loss of up to 3 points as determined by the instructor and TA.
Total	20	

Laboratory Role

Chemistry is an experimental science. Lab time is your chance to master some of the experimental aspects of the subject. You will work in groups in the lab, but you will still be expected to actively participate in the experiments. Passive observation in lab while your partners do the work is unacceptable and will cost you up to 2 points. The TA and your instructor will determine participation points.

Each group will consist of three to four roles. These roles will be assigned at the start of each lab. If your group consists of only three members, the Scribe and Mathematician roles will be combined. The roles are:

Leader – Keeps the group on track, understands the background.

Lab Tech – Knows the procedure in advance, leads the group through the procedure.

Scribe – Records all information on the data/results and post laboratory sheets

Mathematician - Makes sure all recorded values are to the correct number of significant figures.

Your participation will be graded on the efficiency by which you carried out your role, whether you participated in completing the experiment and whether you helped in the completion of the calculations on the data/results sheet.

Data/Results

Your data must be recorded to the correct number of significant digits. Your results will be graded for correctness in calculations, the correct number of significant digits, and for accuracy.

Post Lab

Your post-laboratory will be graded for thoughtful answers based on your data/results and for correctness. One data and results sheet will be turned in for each group on the Friday after completion of the lab.

Safety

Safety is Mandatory. You will not be allowed to enter the lab without closed toe shoes and goggles. You will be warned upon your first safety violation. A second violation will result in the loss of 2 points. The third violation will result in you being required to leave the lab for that day and receiving a zero for that lab.

**Safety
Agreement**

Before being permitted into the first lab, you must complete the safety agreement at <https://uca.edu/web/forms/view.php?id=353>

Demo Show Further Explained

Demo Show:

Demo Show

This course contains a Demo Show component. The Demo Show component will be a 3-person group project. The Demo Show will involve participation in the development of a chemical demonstration and presentation of that demonstration at a Show scheduled April 12th from 7:30-9:00 pm on the STEM@Arkansas Hall Lawn. Completion of the project will constitute 100 points of your grade.

Objectives

Students will: (1) learn to work in teams, (2) evaluate activities for safety, expense, etc., (3) learn to orally communicate scientific concepts to a broad audience, and (4) learn how to write up a scientific procedure.

Process

The group will:

- Consist of 3 students
- Decide on a demonstration to present to the public
- Communicate the names of the group members and the activity to the instructor via email for approval
- Meet with the instructor on one occasion (described below).
- Present demonstration at the show (all members must be in attendance).
- Submit a write-up over their activity.
- Evaluate their participation and the participation of the other members of their group.

Pseudoscience Fair Grade:

Email communication – group members, activity, materials	5
Meeting with Instructor – Feb 6-12 th (instructor will have a sign-up sheet)	10
Quality Communication at Demo Show	40
Paper	20
Self-Evaluation	15
Member Evaluation (Participation)	10
Total	100

Description of Grade

The group will:

- **Email Communication**
Students will establish their group and determine a topic. The names of the group members and topic must be emailed to the instructor, along with an initial list of materials, by Feb 1st for approval. The first group to email the instructor regarding a specific hands-on activity will receive approval of that activity assuming it is reasonable for the Demo Show. If denied approval, the group will need to edit according to the instructors comments.
- **Meeting with Instructor**
We will discuss the list of materials needed to accomplish the demo during this meeting. Additionally, you will be required to correctly explain the science behind the activity to the instructor.
- **Quality Communication at Science Night**
10 pts – attend
10 points – explaining the science behind the activity
20 pts – a quality explanation of the science behind the activity
- **Paper**
The paper must have an objective, materials list, procedure, safety considerations, and scientific explanation. Your grade will be determined on the quality of the paper and its science. Plagiarism of any part will result in a 0 on this portion. The paper will be submitted through blackboard.
- **Self-Evaluation**
10 potints – thoughtful completion
- **Member Evaluation**
0 points if your group member and instructor determines that you did not participate
2-10 points depending on your degree of activity within the group as indicated by the other members’ evaluation and the instructor’s evaluation.

Pseudoscience Fair Calendar:

Date	Location	Time
Feb 1	Email Communication Due	
Feb 6-12	Meeting with the Instructor	
Apr 12	Demo Show Students must be there by 7:00 pm Show 7:30 pm – 9:00 pm	
Apr 14	Paper Due	9:00 am
Apr 14	Member Evaluation Due	9:00 am
Apr 14	Self-Evaluation Due	9:00 am

Tentative Schedule (Lab and Exam Dates will NOT Change)

Date	Topic	Lab Due
Jan 13	Syllabus	
16	<i>Martin Luther King Day – No Class</i>	
17	Graphing Lab	
18	Liquids, Solids, and Intermolecular Forces	
18	<i>Last Day to Change Your Schedule for the Spring Semester</i>	
20	Liquids, Solids, and Intermolecular Forces	Graphing
23	Liquids, Solids, and Intermolecular Forces	
24	Aspirin	
25	Solutions	
27	Solutions	Aspirin
30	Solutions	
31	No Lab	
Feb 1	Solutions	
3	Solutions	
6	Chemical Kinetics	
7	Lab Lecture	
8	Exam 1	
10	Chemical Kinetics	
13	Chemical Kinetics	
14	Sugar Density	
15	Chemical Kinetics	
17	Chemical Equilibrium	Sugar
20	Chemical Equilibrium	
21	Kinetics	
22	Chemical Equilibrium	
24	Chemical Equilibrium	Kinetics
27	Acids and Bases	
28	K_{eq} Spectral Determination	
Mar 1	Acids and Bases	
3	Acids and Bases	K _{eq}
6	Acids and Bases	
Mar 7	Le Chatlier's	
8	Exam 2	
10	Aqueous Ionic Equilibrium	LeChatlier's
13	Aqueous Ionic Equilibrium	
14	Weak Acid	
15	Aqueous Ionic Equilibrium	
17	Aqueous Ionic Equilibrium	Weak Acid
20-24	<i>Spring Break – No Classes or Lab</i>	
27	Aqueous Ionic Equilibrium	
27	<i>Final Date to withdraw with a W grade</i>	
28	Buffer	
29	Free Energy and Thermodynamics	
31	Free Energy and Thermodynamics	Buffer
Apr 3	No Class - Study	
4	<i>No Lab</i>	
5	Exam 3	

7	Free Energy and Thermodynamics	
10	Free Energy and Thermodynamics	
11	Ksp	
12	Free Energy and Thermodynamics	
14	Electrochemistry	Ksp
14	<i>Final Date to withdraw with a WP/WF grade</i>	
17	Electrochemistry	
18	KNO₃ and Thermodynamics	
19	Electrochemistry	
20	Electrochemistry	KNO ₃
24	Exam 4	
25	Electrochemistry Lab	Electrochem
26	Nuclear	
28	<i>Study Day – No Class</i>	
May 3	Final Exam: 2:00 pm – 4:00 pm	

Technology Instructions

Laboratory Safety Agreement – required for admittance to first lab

Go to <https://uca.edu/web/forms/view.php?id=353>

Complete the Form

Blackboard – contains PowerPoints, Videos, Optional Homework, Syllabus, Evaluation forms, etc.

Log into your MyUCA account

Click on the My Courses tab

Click on College Chemistry II

Opportunities for Bonus Points (You can earn up to 30 point maximum.)

Opportunity	Attendance	Evaluation
Chalk Talk	5	
Seminar	5	
MapWorks Completed (show print-out or screen shot of completion screen)	5	
Map-Works Evaluation (Found under Course Bonus folder in Blackboard)		10
Science Night	10	

Attendance Points – Sign in with Dr. Yarberry and be attentive. No cell phones, computers, or talking.

MapWorks Evaluation and Guest Lecturer Evaluation– Complete the form available on Blackboard

Lab	
Graphing	_____/20
Aspirin	_____/20
Lecture	_____/20
Sugar	_____/20
Kinetics	_____/20
Keq	_____/20
LeChatlier's	_____/20
Weak Acid	_____/20
Buffer	_____/20
Ksp	_____/20
Thermo	_____/20
Electrochem	_____/20

Demo Show	
Email	_____/5
Inst. Meeting	_____/10
Show	_____/40
Paper	_____/25
Self Eval	_____/15
Member Eval	_____/10

In-Class Quiz	
Quiz 1	_____/5
Quiz 2	_____/5
Quiz 3	_____/5
Quiz 4	_____/5
Quiz 5	_____/5
Quiz 6	_____/5
Quiz 7	_____/5
Quiz 8	_____/5
Quiz 9	_____/5
Quiz 10	_____/5
Quiz 11	_____/5
Quiz 12	_____/5
Quiz 13	_____/5
Quiz 14	_____/5
Quiz 15	_____/5
Quiz 16	_____/5

Exams	
Exam 1	_____/150
Exam 2	_____/150
Exam 3	_____/150
Exam 4	_____/150

Bonus	

Course Item	# Given	# Dropped	# Toward Grade	Points per Item	Total Points
Lab	12	2	10	20	200
In-Class Quizzes	?	?	10	5	50
Demo Show	1	0	1	100	100
Exams	4	1	3	150	450
Final Exam	1	0	1	200	200
Total					1000

To determine what you need to make on your final exam:

- A. Sum of Top 10 Lab Grades _____
- B. Sum of Top 3 Exam Grades _____
- C. Sum of Demo Show _____
- D. Sum of Top 10 In-Class Quiz Grades _____
- E. Bonus (up to 30 points) _____
- F. Total Sum A – F above** _____

For an A on your transcript, the following equation indicates the number of points you need on your final exam.

$$900 - F = \underline{\hspace{2cm}}$$

For a B on your transcript, the following equation indicates the number of points you need on your final exam.

$$800 - F = \underline{\hspace{2cm}}$$

For a C on your transcript, the following equation indicates the number of points you need on your final exam.

$$700 - F = \underline{\hspace{2cm}}$$

For a D on your transcript, the following equation indicates the number of points you need on your final exam.

$$600 - F = \underline{\hspace{2cm}}$$