

General Chemistry for Health Sciences
CHEM 1402 Syllabus
Fall 2019

Instructor

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Office Hours

T - 8:30-10:30pm
W - 12:00-1:00pm
R - 9:30-10:30pm
Appointments are also available.
Email for an appointment.

Class Meeting Time

Lecture:

CRN 17864 T,R 10:50-12:05 Laney 104
CRN 18289 T,R 10:50-12:05 Laney 104
CRN 19987 T,R 10:50-12:05 Laney 104
CRN 20063 T,R 12:15-1:30 Laney 104
CRN 23673 T,R 12:15-1:30 Laney 104

Lab:

CRN 17864: W 8:00 - 9:50am Laney 202
CRN 18289: W 10:00 - 11:50am Laney 202
CRN 19987: T 2:40 - 4:40pm Laney 202
CRN 20063: F 10:00 - 11:50pm Laney 202
CRN 23673: F 12:00 - 1:50pm Laney 202

Course Objective

CHEM 1402 covers topics in general chemistry as they relate to the health science professions. The objective of this course is to provide students with a general knowledge of chemistry and how it applies to the health science field. Students should leave this course with an understanding of basic chemical principles and how these principles apply to their daily lives.

Course Prerequisites

CHEM 1402 has a pre-requisite of ACT mathematics score of at least 21 or corequisite/prerequisite of MATH 1390. It is recommended that students have taken and passed high school chemistry or have completed CHEM 1301 with a C or better. **It is assumed that students enrolled in this course have some previous exposure to chemistry and have developed simple algebraic skills. Manipulations of simple chemical equations will be required.**

Course Materials

1. Text: Fundamentals of General, Organic, and Biological Chemistry, 8th Edition (2017), J. McMurry, M. Castellion, and D. Ballantine.
ISBN-13: 978-0-321-75083-9 ISBN-10: 0-321-75083-7
2. Approved (ANSI Z. 87) laboratory eye protection.
3. Access to a printer for printing lab materials is required.
4. You will need a calculator for this class. It does not have to be a graphing calculator but it should have logarithm and scientific notation functions. You should know how to use your calculator. **Calculators in cell phones may not be used.** You will not be permitted to share a calculator with a classmate during exams or quizzes. Bring your calculator to class, as there will be times when we will be working in class problems.

How to be successful in this course

1. **Attend lecture.** Students who do not attend lecture will not be successful in this course. Some of the topics I cover will not be presented in the book. You are responsible for the material covered in class and the reading assignments. Attending class is highly recommended.
2. **Read the book.** The book is an excellent reference and provides example problems that will greatly aid you in preparation for exams. Reading the chapter *before* lecture will give you an idea of what we will be covering and will better prepare you for lecture. Most of the figures I show in class are from the text.
3. **Study time.** I recommend you devote between **two and three hours per lecture** hour to study time. You should identify two or three other classmates to study with, ask questions, and use the textbook questions as a guide.
4. **Chemistry requires practice.** Chemistry is a field that requires you to practice and think. Many of you may not have had the opportunity to develop your critical thinking skills. To help develop these skills, you will need to **practice and understand** the problems that are presented in lecture and the problems in the text. Chemistry is not a spectator sport and to be successful it requires hard work and lots of practice. *Working the problems in the book will greatly aid your understanding of the material.*
5. **Ask questions.** If you do not understand the concepts I have presented in lecture, ask questions. Chemistry is a science in which one concept is built on another. If you do not understand a chemical concept, then it is not going to get easier as the semester progresses. Please do not be embarrassed, there is no such thing as a stupid question. Stupidity lies in not asking. Please feel free to stop me in lecture with a question or if you would prefer stop by my office during office hours and ask.
6. **Be an interactive learner.** Ask questions and participate in class discussions. This is an excellent way to understand the material and hopefully you find many of the topics we cover are applicable to your life.

Grading

4 Exams at 100 points each	= 400 points
1 Final exam (comprehensive)	= 200 points
10 quizzes at 5 points each	= 50 points
12 labs at 15 points each (includes two drop labs)	= 180 points
<u>10 Homework assignments at 10 points each</u>	<u>= 100 points</u>
Total points	= 930 points

Grading Scale

A: 90%
B: 80%
C: 70%
D: 60%
F: 50% and below

Missed Exams and Quizzes

A missed quiz will not be made up. A missed exam can be made up **before the original exam time** at my discretion. If you will miss an exam for a **valid and significant reason**, and you contact me either through email or phone **before** the scheduled exam, then we can discuss the possibilities of a make-up exam. If you contact me after the exam, no make-up will be given. I strongly suggest that you make every effort to attend exams and quizzes. Tardiness to an exam is discouraged.

Attendance and Class Participation Policy

Attendance will be taken. Poor class attendance and vice versa excellent class attendance will be taken into account in determination of final grade at the critical areas. You are advised to attend all lectures since material presented in class will supplement the text and be included in quizzes and exams. Students who miss class are responsible for obtaining and knowing the material presented in class and class announcements.

Laboratory Safety

Safety in the laboratory is of utmost importance. You and your classmates' safety depend on one another. Horseplay, pranks, and other inappropriate behavior will not be tolerated and will result in you being excused from the lab with a 0 recorded for that laboratory. Use common sense, many of the chemicals can be toxic, corrosive, flammable, and have generally ill affects to you. If you are unsure of a technique or a chemical, **ASK BEFORE USING IT!!** Goggles or glasses with side shields will be required in the laboratory. **Those students who do not have proper eye protection will not be allowed to complete that laboratory and receive a grade of 0 for that lab.**

Laboratory Reports

All lab materials will be posted to blackboard. There are dry labs and wet labs in this course. A dry lab means that you are doing an assignment **during lab time** to reinforce concepts learned in class. **For a dry lab, the assignment is due before you leave lab.** Wet labs are experiments using chemicals. For wet labs there are three parts that you will turn in: a pre-lab, a data sheet, and a post-lab. Pre-lab portions of the laboratory are required to be completed **prior to entering the laboratory**. The pre-lab will be taken up before the lab begins, so make sure you have not printed any material you will need DURING the lab on the back of the pre-lab sheet. **Any student not having the pre-lab completed will be given a zero for that laboratory.** The data sheets and post-labs are due at the end of the lab period. There are no make-up laboratories. **Your lowest two lab scores will be dropped.**

Problem Sets

Chapter problems and assignments will be posted to the course website. It is to your benefit to work these suggested problems prior to exams. They will contribute to your homework grade and **THEY WILL BENEFIT YOUR EXAM GRADE.**

Class Disruptions

Cell phones should remain on silent and out of sight during lecture and laboratory. **Texting and social talking is not acceptable in this course.** We have a lot material to cover in a semester and social visiting inhibits the learning process. It is a disruption to your classmates and shows a lack of respect for the class and the instructor. Those students engaged in social talking, texting and/or disruptive behavior will be asked to leave the lecture or laboratory.

Academic Honesty

Cheating or representing someone else's work as your own is **not tolerated**. The penalties for cheating are **severe** and include, but are not limited to, assigning an "F" for the work and/or the course to expulsion from the University. 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.

UCA Policies

Students are encouraged to familiarize themselves with all the policies listed in the UCA Student Handbook. Students should pay particular attention to the Academic Policy on page 37 and the Sexual Harassment Policy on page 115.

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 Disability Resource Center, 450-3613.

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.

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 the 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.

Lecture Schedule (LAN 102)

This is a tentative schedule, all dates and contents are subject to change

Date	Topic	Chapter	Assignments Due
Aug 22	Introduction, Matter & Chemistry,	1	
Aug 27	Measurements in Chemistry	"	
Aug 29	"	"	Quiz 1
Sep 3	Atoms and the Periodic Table	2	HW Ch 1
Sep 5	"	"	Quiz 2
Sep 10	Ionic Compounds	3	HW Ch 2
Sep 12	"	"	Quiz 3
Sep 17	Exam 1		HW Ch 3
Sep 19	Molecular Compounds	4	
Sep 24	"	"	Quiz 4
Sep 26	Chemical Reactions	5	HW Ch 4
Oct 1	"	"	Quiz 5
Oct 3	Mol Mass Relationships	6	HW Ch 5
Oct 8	"	"	Quiz 6
Oct 10	Exam 2		HW Ch 6
Oct 15	Energy, Rate, & Equilibrium	7	
Oct 17	Fall Break		
Oct 22	Energy, Rate, & Equilibrium	7	
Oct 24	"	"	Quiz 7
Oct 29	Gases, Liquids, & Solids	8	HW Ch 7
Oct 31	"		Quiz 8
Nov 5	Solutions	9	HW Ch 8
Nov 7	"	"	Quiz 9
Nov 12	EXAM 3		HW Ch 9
Nov 14	Acids & Bases	10	
Nov 19	"	"	Quiz 10
Nov 21	"	"	
Nov 26	Functional Groups	12	HW Ch 10
Nov 28	Thanksgiving Holiday		
Dec 3	EXAM 4		
Dec 5	Review for Final		
Dec 10	Final Exam 11:00am – 1:00pm CRN 20063, 23673		
Dec 12	Final Exam 11:00am – 1:00pm CRN 17864, 18289, 19987		

Laboratory Schedule (1402)

CRNs 17864, 18289, 19987

Day	Laboratory Experiment
Aug 22/23	No Lab
Aug 26- 30	Safety & *Detecting Signs of a Chemical Change
Sep 2 - 6	*Dosage measurement lab
Sep 9 – Sep 13	*Physiologically Important Ions
Sep 16 - 20	Lewis Structures & Drug Structure (Dry Labs)
Sep 23 - 27	Balancing Chemical Eqns. (dry lab)
Sep 30 – Oct 4	Mole Calculations (dry lab)
Oct 7 – Oct 11	Required study session – students must email me questions
Oct 14 - 18	Fall Break – No Lab
Oct 21 - 25	*LeChatelier's Principle
Oct 28 – Nov 1	*Chromatography & Hydrogen Bonding Dry Lab
Nov 4 - 8	*Egg Shell Solubility
Nov 11 - 15	*Titration of Vinegar
Nov 18 - 22	*Blood Buffer Lab
Nov 25 - 29	Functional groups (dry lab)
Dec 2 - 6	No Lab

* These labs are the **wet labs** that we are doing this semester. This means that you **MUST** wear **pants, closed toed shoes, and GOGGLES** to these labs. You must also **read the lab procedure** and complete the **pre-lab assignment** for these labs **before** the lab period.

Laboratory Schedule (1402)

CRNs 20063, 23673

Day	Laboratory Experiment
Aug 22/23	No Lab
Aug 26- 30	Safety & *Detecting Signs of a Chemical Change
Sep 2 - 6	*Dosage measurement lab
Sep 9 – Sep 13	*Physiologically Important Ions
Sep 16 - 20	Lewis Structures & Drug Structure (Dry Labs)
Sep 23 - 27	Balancing Chemical Eqns. (dry lab)
Sep 30 – Oct 4	Mole Calculations (dry lab)
Oct 7 – Oct 11	Required Study Session – Students must email me questions
Oct 14 - 18	Fall Break – No Lab
Oct 21 - 25	*LeChatelier's Principle
Oct 28 – Nov 1	*Chromatography & Hydrogen Bonding Dry Lab
Nov 4 - 8	*Egg Shell Solubility
Nov 11 - 15	*Titration of Vinegar
Nov 18 - 22	*Blood Buffer Lab
Nov 25 - 29	Thanksgiving – Functional Groups (dry lab) due T 26th in class or W 27th
Dec 2 - 6	No Lab

* These labs are the **wet labs** that we are doing this semester. This means that you **MUST** wear **pants, closed toed shoes, and GOGGLES** to these labs. You must also **read the lab procedure** and complete the **pre-lab assignment** for these labs **before** the lab period.