

# Chemistry 2450

## Syllabus

### Spring 2016

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#### **Instructor**

Dr. Melissa Kelley  
201-A Laney  
Phone: 501-450-5960  
Email: mkelley@uca.edu  
<http://faculty.uca.edu/mkelley>

#### **Class Meeting Time**

Lecture: MWF 12:00-12:50 Laney 102  
Lab: R 8:30-10:20 Laney 202  
10:50-12:40  
Lab: F 8:30-10:20

#### **Office Hours**

Monday 1:15-2:45  
Wednesday 1:15-2:45  
Appointments are also available.

#### **Course Objective**

Chemistry 2450 is the second of a two-part course designed for students interested in the health science profession. This course covers topics in organic chemistry and biochemistry as they relate to the health science profession. 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 organic and biochemical principles and how these principles apply to their daily lives.

#### **Course Prerequisites**

Chemistry 2450 has a pre-requisite of a grade of C or better in CHEM 1402. Not all of the information covered in this course will be in your textbook. Additional material will be covered in lecture and you will be responsible for understanding supplemental material.

#### **Course Materials**

1. Text: General, Organic, and Biochemistry, 6<sup>th</sup> Edition (2010), J. McMurry, M. Castellion, and D. Ballantine.
2. Labs are available through Dr. Kelley's website
3. Approved (ANSI Z. 87) laboratory eye protection.

#### **How to be successful in this course**

1. **Attend lecture.** Students who do not attend lecture will not be successful in this course. Many 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 and bring the book to class.** The book is an excellent reference and provides example problems that will greatly aid you in preparation for exams. Reading the chapter summaries before lecture will give you an idea of what we will be covering and will better prepare you for lecture. Some 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 study time. I recommend you identify two or three other classmates to study with, asking questions, and using the textbook questions as a guide.
4. **Chemistry requires practice.** Chemistry is a field that requires you to practice and think. Many of you have not 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. 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.

### **Important Notes:**

1. I cannot discuss grades by phone or email.
2. I will not calculate your grade for you.
3. I will not re-grade your exam for additional partial credit. If I have made a mathematical calculation error, then the error can be discussed. I will not re-grade your exam or quizzes.
4. Late work is never accepted.
5. If you miss class, I will not provide a make-up lecture for you on the material. It is your responsibility to obtain the material. I would recommend that you try to have someone record the lecture for you, and get a least two people's notes over the material. After you have done these things, please come to me if you have specific questions about the material you missed.
6. I do not provide extra credit. There are plenty of opportunities for credit during the semester.
7. You must submit assignments in the manner requested and follow the directions concerning quizzes, exams, and assignments. Failure to follow the directions may result in a zero or significant loss in points.

### **Grading**

4 Exams at 100 points each=400 points  
 1 Final exam (comprehensive) at 200 points  
 5 quizzes at 10 points each =50 points  
 10 labs at 15 points each = 150 points  
 Miscellaneous Assignments=0-100 points  
 Total points=800-900 points

### **Grading Scale**

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

### **Missed Exams and Quizzes**

A missed quiz will not be made up. A missed exam will be made up at my discretion. If you 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 or quiz is strongly discouraged.

### **Attendance Policy**

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

### **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 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 effects on 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 and Pop Quizzes**

Laboratory reports are due the following laboratory period and will not be accepted late. Pre-lab portions of the laboratory are required to be completed prior to entering the laboratory. **Any student not having the pre-lab completed will be given a zero for that laboratory.** There are no make-up laboratories. Your lowest lab score will be dropped. Laboratory pop-quizzes may be given during the course of the semester.

### **Chapter Problems and Weekly Problems**

Chapter Problems are listed on the course website. Weekly problems will be listed on the course website. The weekly problems should be worked by the student prior to the lab and are due the following week stapled to the laboratory report. You will be penalized on your lab report for not completing these problems.

### **Miscellaneous Assignments**

There may be an opportunity for students to work assigned homework problems during lab. Additionally, students may be requested to keep a nutritional diary and meal plan assignment as the semester progresses. These assignments will be given at the instructor's discretion.

### **Class Disruptions**

Cell phones, pagers, and other electronic devices that make noise should remain off during lecture and laboratory. Social talking is not acceptable in this course. Texting is inappropriate in this course. We have a lot of material to cover in a semester and social visiting/texting clearly 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 **severely discouraged**. 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**

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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 and the Sexual Harassment Policy.

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 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.*

The University of Central Arkansas adheres to the requirements of the Americans with Disabilities Act. If you need accommodations under this Act due to a disability, please contact the UCA office of Disabilities Services, 450-3135.

## Lecture Schedule

**\*This is a tentative schedule-all dates and contents are subject to change**

Date	Topic	Chapter	Pages	Assignment
Jan 8	Introduction			
Jan 11	Chapter 12-Alkanes	12	354-383	
Jan 13	Chapter 12 cont. Chapter 13-Alkenes, Alkynes, & Aromatics	13	388-418	
Jan 15	Chapter 13 cont.			
<b>Jan 18</b>	<b>MLK Day-No class</b>			
Jan 20	Chapter 14-O,S, and X- Containing Cpds	14	424-450	<b>Quiz 1</b>
Jan 22	Chapter 14 cont.			
Jan 25	Chapter 15-Amines	15	456-475	
Jan 27	Chapter 15 cont.			
Jan 29	Chapter 16-Aldehydes & Ketones.	16	480-502	
Feb 1	Chapter 16 cont.			
<b>Feb 3</b>	<b>EXAM 1</b>			<b>EXAM 1</b>
Feb 5	Chapter 17-Carboxylic Acids and Derivatives	17	508-538	
Feb 8	Chapter 17 cont.			
Feb 10	Chapter 17 cont. Chapter 22 Carbohydrates	22	680-712	
Feb 12	Chapter 22 cont.			<b>Quiz 2</b>
Feb 15	Chapter 24-Lipids	24	744-770	
Feb 17	Chapter 24 cont.			
Feb 19	Chapter 18-Proteins	18	544-579	
Feb 22	<b>EXAM 2</b>			<b>EXAM 2</b>
Feb 24	Chapter 18 cont.			
Feb 26	Chapter 18 cont. Chapter 19 Enzymes	19	584-614	
Feb 29	Chapter 19 cont.			
Mar 2	Chapter 19 cont.			
Mar 4	Chapter 19 cont. Chapter 21-Biochemical Energy	21	646-675	<b>Quiz 3</b>
Mar 7	Chapter 21 cont.			
Mar 9	Chapter 21 cont.			
<b>Mar 11</b>	<b>EXAM 3</b>			<b>EXAM 3</b>
Mar 14	Chapter 21 cont.			

Mar 16	Chapter 23-Carbohydrate Metabolism.	23	716-740	
Mar 18	Chapter 23 cont.			
<b>Mar 21-25</b>	<b>Spring Break</b>			
Mar 28	Chapter 23cont.			
Mar 30	Chapter 23cont. Chapter 25 Lipid Metabolism	25	774-793	
Apr 1	Chapter 25 cont.			<b>Quiz 4</b>
Apr 4	Chapter 25 cont.			
<b>Apr 6</b>	<b>EXAM 4</b>			<b>EXAM 4</b>
Apr 8	Chapter 25 cont.			
Apr 11	Amino Acid Metabolism			
Apr 13	Amino Acid Met. cont			
Apr 15	Amino Acid Metabolism Chapter 26-Molecular Genetics	26	796-824	<b>Quiz 5</b>
Apr 18	Chapter 26 cont.			
Apr 20	Review			
<b>Apr 22</b>	<b>Reading Day No Class</b>			
<b>Apr. 27</b>	<b>FINAL EXAM</b>			<b>11:00-1:00</b>

## Laboratory Schedule

Day	Laboratory Experiment
Jan 14-15	Safety/Lewis Structure
Jan 21-22	Alkane Isomer Lab
Jan 28-29	Alkene Testing
Feb. 4-5	No lab
Feb. 11-12	H-bonding
Feb. 18-19	Organic Reactions
Feb. 25-26	Synthesis of Aspirin
March 3-4	Carbohydrate Lab
March 10-11	No lab
March 17-18	Protein structure/function lab
March 24-25	Spring Break!! No lab this week
March 31-Apr 1	Enzyme lab
April 7-8	Organic Scavenger Hunt
April 14-15	DNA Isolation Lab
April 21-22	No lab