CHEM 2401 Organic Chemistry 1 Summer 2017

Instructor: Dr. Nolan Carter
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Webpage: Course materials are posted on Blackboard

Lecture:	M, T, R, F	8:00 AM – 9:30 AM	Laney 101
	W	8:00 AM – 11:15 AM	
Lab:	M, T, R	9:50 AM -12:30 PM	Laney 306
Office hours:	M, T, R	12:45 PM - 1:45 PM (9:30 AM - 10:30 AM if lab does not meet)	
	W	11:30 AM – 12:30 PM	

Required course materials:

Organic Chemistry, 5th ed., Janice Gorzynski Smith, McGraw-Hill, 2017.
CHEM 2401 Laboratory Procedures (posted on Blackboard)
Laboratory notebook (with carbonless copy paper)
Safety goggles
Molecular model set

Optional Course Materials:

Student Study Guide/Solutions Manual for use with Organic Chemistry (5th ed.), Janice Gorzynski Smith.

Course Description and Objectives:

CHEM 2401 (Organic Chemistry 1) is the first part of a two-semester sequence which is continued with CHEM 3411 (Organic Chemistry 2). This course will serve as an introduction to the field of organic chemistry. Topics covered include structure and bonding in organic molecules, nomenclature of basic types of organic molecules, as well as an introduction to organic reactions and the mechanisms by which they occur.

Prerequisite:

A grade of "C" or better in CHEM 1451 (College Chemistry 2) is required to take CHEM 2401 (Organic Chemistry 1).

Attendance Policy:

Lecture attendance is strongly encouraged. Given the large amount of material we will cover, it will be extremely difficult to be successful in this class if you do not attend regularly. **Makeup exams and quizzes will not be given unless the reason for absence is an officially sanctioned UCA activity**. It is your responsibility to provide me with documentation at least one week prior to the exam or quiz. For all other absences, if you contact me **prior** to an exam with a **valid** excuse (documented serious illness, etc.) that exam grade will be dropped and your exam grade will be based upon your other exam scores (including the final exam). **Missing an exam without an acceptable excuse will result in a grade of "0".**

Disruptive behavior: Ringing phones, text messaging, and talking, are considered disruptive. **Consistent tardiness is particularly disruptive to the class**. If tardiness becomes an issue, the classroom door may be locked after class begins. Penalties for disruptive behavior may range from dismissal from class for the day, deduction of points, to a "WF" grade for the course.

Laboratory attendance is required. If a laboratory experiment is missed for acceptable reasons (official UCA activity, serious documented illness, etc.), the missed lab score will be dropped. If a laboratory experiment is missed without an acceptable excuse, a grade of "0" will be assigned. Late arrival to lab may result in a grade of "0" or a lowered lab grade.

General UCA Policies:

You should familiarize yourself with policies listed in the UCA Student handbook (http://uca.edu/student/student-handbook/), particularly those relating to academics and sexual harassment.

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.

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.*

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 thirteenth week of instruction through the end of finals week by logging in to myUCA and clicking on the Evals button in the top right.

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.

Blackboard:

Class materials such as lab procedures, suggested problems, and exams/quizzes from last summer will be posted on the Blackboard page for this course. Keep in mind that there are periodic Blackboard outages/updates and they will probably occur at the most inopportune times! Be sure to print any needed materials well ahead of time.

How to Be Successful in This Class:

1. **Come to class prepared**. Read through the material we will cover in lecture **before** class. Identify the material that you think is hard to understand and come prepared to ask questions about it. **PowerPoint presentations will be posted on Blackboard-print these out and bring them to class.**

2. **Participate in class.** Class should be a dialogue not a monologue. In other words, don't be afraid to ask questions and answer questions I ask. If I say something that doesn't make sense, **stop me**. I don't mind being interrupted-that way I know you are paying attention.

3. **Work the suggested problems!** In order to truly grasp the material we cover, you will need to develop your skills by working problems from your textbook. The problems may seem easy when you watch me work them in class, but if you don't practice on your own they won't seem very easy on the day of the exam. Working questions from old exams is also a helpful way of gauging your understanding of the material. Don't look at the answer key until after you have attempted the problems.

4. **Don't get behind**! This is very crucial in a summer class; try to spend some time every day on the material.

5. **Keep in mind that the course is comprehensive**. Although the final exam is the only officially comprehensive test, any test or quiz may require you to use information and skills from earlier in the course.

6. **Know when to seek help**. If you are having difficulty with the course or have a question stop by my office. If you are having trouble, don't wait until the last week of class to ask for help-by then it will be too late.

Grading:

Your grade in this course will be based upon your performance in lecture and laboratory. **The lecture portion of the course is worth 75% of the total grade and the laboratory portion is worth 25%**. Your lecture grade will be based upon your scores on 4 exams, a comprehensive final, and best 4 of 5 quizzes. The laboratory grade will be based upon your lab notebook, prelab quizzes, attendance, effort, and competence.

Lecture	Points	Laboratory	Points
4 Exams (100 pts each)	400	7 experiments @ 25 points each	175
Best 4 of 5 Quizzes (25 points each)	100	5 Experiments @ 15 points each	75
Final Exam (Comprehensive)	200		
Total	**700**		**250**

$$\text{Your Grade} = \left(\frac{\text{Your Lecture Points}}{\text{Total Lecture Points}}\right)(75) + \left(\frac{\text{Your Lab Points}}{\text{Total Lab Points}}\right)(25)$$

Tentative Grading Scale

Percentage	Letter Grade
90-100	A
80-89	B
70-79	C
60-69	D
≤ 59	F

Exams: The exams will consist largely of questions similar to the suggested problems and examples worked in class. Laboratory material will also be covered on exams. The best way to prepare for the exams is to work as many problems as you can. The suggested problems are the minimum amount you should work. Use the old exams posted on Blackboard to get an idea of exam length and what types of questions will be asked. No exam score will be dropped.

Quizzes: Quizzes will be given at the beginning of class each Wednesday. The lowest quiz will be dropped. If you are absent or late to class the day of a quiz, that will count as your dropped quiz.

Final Exam: The cumulative final exam will be given on Friday, July 7 from 8:00 AM - 10:00 AM.

Laboratory Safety:

During the course of the semester, you will be working with a wide variety of organic chemicals. Many organic chemicals are hazardous-they can be toxic, carcinogenic, caustic, or flammable. You should handle all organic chemicals carefully. Disregarding safety practices will result in dismissal from lab and a grade of "0" for the day. Prior to performing any laboratory work, you must review and sign the CHEM 2401 lab safety agreement.

The most important aspect of safety in an organic chemistry laboratory is eye protection. Safety glasses must be worn at all times. **You will not be allowed to attend lab if you do not have safety glasses**. No spare googles are available in the laboratory. Sandals may not be worn in lab. You will not be allowed to attend lab if you are dressed inappropriately. The balances and other common areas should be kept clean and orderly. Failure to maintain an orderly laboratory may result in a deduction of points from individuals or the entire class.

Laboratory Policies and Grading:

1. Lab experiments are worth either 15 or 25 points, depending upon whether or not a lab notebook writeup is required (see lab schedule). Prior to 25 point experiments, a short 5 point quiz will be given at the beginning of the period (see lab schedule). The prelab quizzes are designed to make sure that you have read the lab module from Blackboard before the lab. Both the background/theory sections and the procedure sections may be covered on the quiz. The prelab quiz will start promptly at the scheduled start time of the lab and will only take 5 minutes. Quizzes cannot be made up, so arriving to laboratory late will result in a grade of "0" for the quiz.

2. Some sections of the laboratory notebook write up (purpose, chemical reaction/structures, chemical information) must be completed prior to lab. The yellow sheet(s) containing these sections must be turned in at the beginning of the laboratory period. Failure to turn this section in will result in a deduction of 5 points (out of the possible 25). This section must be turned in immediately after you arrive. Late papers will not be accepted.

3. The remaining yellow notebook pages (containing your procedure, observations, etc.) are due on the 3rd class day after the experiment is completed: **Monday experiments are due at the beginning of lab on Thursday, Tuesday experiments are due at the beginning of lecture on Friday, Thursday experiments are due at the beginning of lab the following Tuesday**. Late papers may not be accepted or may be accepted for reduced credit.

4. Postlab questions should be completed on the handout that you print from Blackboard, not in the notebook.

5. Points may be deducted for poor technique. In the lab, you need to be paying attention to what you are doing. During lab, the instructor will evaluate how well each student is prepared for the lab; follows safety rules; keeps his/her workspace neat; sets up and uses the apparatus properly; is efficient; is able to perform the experiments; uses the equipment properly; isolates pure product and (to a lesser extent) in high yield.

6. The table on the following page provides detailed information regarding the contents of your lab notebook.

Lab Notebook Requirements

		Approximate point values
Page Headers	The title of the experiment is shown on every page.	**~ 1 point**
	Your lab day/time is written on every page.	
	The correct date is written on every page.	
	The full name of your lab partner is written on every page.	
	Your name is written on every page.	
Purpose	A purpose for the experiment is written as the first item. What is the overall goal of the experiment? How will your accomplish this goal? Briefly (several sentences) summarize this in your own words.	**~ 1 point**
Chemical Information	If you are doing a separation or characterization, show the structures of the compounds you are separating.	**~ 3 points**
	If you are doing a reaction, the ACTUAL reaction should be shown. Don't show a generic or unrelated example of the reaction.	
	Safety concerns should be summarized in your notebook.	
	Physical constants (molar mass, bps, mps, etc) provided in the lab module should be copied into your notebook.	
Procedure	Write on the left side of the center dividing line in your notebook. Double space your entries. The procedure should be written as a summary of steps taken. You do not need to write in complete sentences. Write down the steps as you perform them. Your procedure should be detailed enough that another person could repeat your experiment without referring to a lab manual. Write in past tense.	**~ 5 points**
Observations	Record observations on the right side of the center dividing line in your notebook. Write down what you see: color changes, bubbling, precipitate formation, product color and texture, etc. Another person repeating your work would want to know this information. Use correct spellings ("percipitant" and "yeild" are not words).	**~ 4 points**
	Do not use nonstandard abbreviations.	
	Record the units of all measurements. Clearly identify what all quantities refer to (e.g., don't just write 10g, write 10g of NaCl).	
	Show all work for calculations so readers can follow your reasoning. Use significant figures correctly and record EVERY digit from the balance when you determine a mass. All numbers in your calculations should include the appropriate units and chemical names.	
Postlab Questions	All postlab questions should be completely answered on the sheets provided in the lab module. Do not write answers in your notebook. If no postlab questions are assigned you may be asked to write a summary of your experimental results in which you address the yield, purity, and identity of your product. More details will be provided at the time of the experiment.	**~ 6 points**
Miscellaneous	Use correct spelling and grammar and legible handwriting.	**point deductions vary**
	Your notebook should be neat and organized.	
	Staple the report in the correct sequence.	
	Do not write directly on the yellow sheets.	
	You should use proper lab technique and follow all safety rules.	
	Your product should be pure and isolated in a reasonable yield.	
	Staple all spectra (NMR, IR, etc.) to your notebook pages.	

These sections must be completed prior to laboratory and turned in at the beginning of the lab period. Failure to complete these sections will result in a deduction of 5 points.

These sections must be completed during the experiment. All information should be recorded directly into the notebook, not elsewhere then transferred to the notebook later.

This section should be completed after the experiment.

Tentative Lecture and Lab Schedule

Monday	Tuesday	Wednesday	Thursday	Friday
June 5 **Lecture**: Ch. 1 Structure & Bonding **No Lab**	**June 6** **Lecture**: Ch. 1 cont., Ch. 2 Acids & Bases **Lab**: Safety, Orientation, General Chemistry Review – 15 points	**June 7** **Lecture**: Ch. 1 cont., Ch. 2 Acids & Bases, **Quiz 1**	**June 8** **Lecture**: Ch. 3 Intro to Organic Compounds **Lab**: Natural Dyes – 25 points	**June 9** **Exam 1 (Ch. 1-3)**
June 12 **Lecture**: Ch. 4 Alkanes **Lab**: Melting Points – 25 points	**June 13** **Lecture**: Ch. 4 cont. **Lab**: ^{13}C NMR Spectroscopy – 15 points (no prelab quiz, no notebook)	**June 14** **Lecture**: Ch. 4 cont., Ch. 5 Stereochemistry **Quiz 2**	**June 15** **Lecture**: Ch. 5 cont. **Lab**: Stereochemistry – 15 points (no prelab quiz, no notebook, bring model set to lab)	**June 16** **Exam 2 (Ch. 4,5)**
June 19 **Lecture**: Ch. 6 Organic Reactions **Lab**: Infrared Spectroscopy – 15 points (no prelab quiz, no notebook)	**June 20** **Lecture**: Ch. 6 cont., Ch. 7 Alkyl Halides & Subsitution **Lab**: Thin Layer Chromatography – 25 points	**June 21** **Lecture**: Ch. 7 cont. **Quiz 3**	**June 22** **Lecture**: Ch. 7 cont. **Lab**: Nucleophilic Substitution: S_N1 and S_N2 – 25 points	**June 23** **Exam 3 (Ch. 6,7)** **"W" drop deadline**
June 26 **Lecture**: Ch. 8 Alkyl Halides & Elimination **Lab**: Green Chemistry (no prelab quiz, no notebook) – 15 points	**June 27** **Lecture**: Ch. 8 cont. **Lab**: Alcohol Dehydration – 25 points	**June 28** **Lecture**: Ch. 9 Alcohols, etc. **Quiz 4**	**June 29** **Lecture**: Ch. 9 cont. **Lab:** Epoxidation of Carvone – 25 points	**June 30** **Exam 4 (Ch. 8,9)** **"WP"/"WF" drop deadline**
July 3 **Lecture:** Ch. 10 Alkenes **Lab**: Brominating Alkenes – 25 points	**July 4** **Campus Closed** **No Class or Lab**	**July 5** **Lecture**: Ch. 10 cont. Ch. 11 Alkynes **Quiz 5**	**July 6** **Lecture**: Ch. 11 cont. **No Lab**	**July 7** **Final Exam (Ch. 1-11) 8-10 AM**

Name_____ (let me know if you don't go by your first name)

CHEM 2401 Organic Chemistry 1
Class Survey Summer 2017

1. What is your major?

2. What are your career plans?

3. If you are not a UCA student, what institution do you attend?

4. When did you take CHEM 1451 (College Chemistry 2)?

5. Who was your instructor for CHEM 1451?

6. What was your grade in CHEM 1451?

7. Have you previously taken Organic Chemistry I?

8. Are you planning on taking Organic Chemistry II during the second summer term?

9. What are your concerns (if any) about the course?

10. Is there anything you would like to tell me about yourself?