

CHEMISTRY 2401 ORGANIC CHEMISTRY I FALL 2017

INSTRUCTOR: Dr. K. C. Cavender Laney-Manion 303C Phone: (501) 450-5944 email: kcweaver@uca.edu

CLASS:	CRN	Lecture	Laboratory
	10542	9:00 - 9:50 am MWF (Laney-Manion 104)	11:00 am - 1:50 pm Wed (Laney-Manion 306)
	19919	9:00 - 9:50 am MWF (Laney-Manion 104)	10:50 am - 1:30 pm Thurs (Laney-Manion 306)
	21764	9:00 - 9:50 am MWF (Laney-Manion 104)	2:40 - 5:20 pm Thurs (Laney-Manion 306)

OFFICE HOURS: Monday 10:15 am - 12:00 pm; Tuesday 9:30 am - 12:00 pm; Thursday 9:30 - 10:30 am; Friday 10:15 am - 12:00 pm; other times available by appointment. Subject to change without notice.

COURSE MATERIALS:

Required:

- *Organic Chemistry*, 5th edition, by Janice Gorzynski Smith
- Sapling Learning online homework access (see information below)
(Online link: <http://www.saplinglearning.com/ibiscms/course/view.php?id=67432>)
- *Chemistry 2401 Organic Chemistry I Laboratory Information* packet (PDF format)--available online only (download from *Blackboard*)
- Individual laboratory experiments (PDF format)--available online only (download from *Blackboard*)
- *Organic Chemistry Laboratory Notebook*
- Approved (ANSI Z.87) laboratory eye protection (glasses or goggles)--be sure that they are approved for use with chemicals; woodworking goggles are NOT acceptable. *Each student must provide his or her own safety eye-wear; no safety eye-wear will be available to borrow.*
- Closed-toed shoes for lab (a pair of leather shoes that cover the whole foot is recommended; *sandals, flip-flops, and other types of open-toed shoes are NOT permitted*)
- Molecular models (*highly recommended*)

Optional:

- Lab coat or apron
- *Student Study Guide/Solutions Manual*, 5th edition, by Janice Gorzynski Smith and Erin Smith Berk (McGraw-Hill)

Recommended reading:

Organic Chemistry as a Second Language: First Semester Topics, 4th edition, by David R. Klein (John Wiley & Sons, Inc. © 2016) NOTE: earlier editions are okay; they are cheaper, but not as up-to-date

COURSE DESCRIPTION AND OBJECTIVES: [CHEM 2401 Organic Chemistry I] “Required for a chemistry major and for many health-profession areas including pre-dentistry, pre-medicine, and pre-pharmacy. Focuses on structure, physical properties, reactivity patterns, and stereochemistry of hydrocarbons and halogenated hydrocarbons. Introduces students to the design of multi-step syntheses and the use of reaction mechanisms to explain chemical behavior. In the laboratory, students learn basic microscale and macroscale laboratory techniques and develop scientific reasoning skills. Laboratory experiments are chosen that clarify and demonstrate the basic chemical principles encountered in lecture. Three hours of lecture and 3 hours of laboratory per week.

Prerequisite: Grade of C or better in CHEM 1451.” (From the UCA *Undergraduate Bulletin*)

NOTE: A prerequisite of a C grade or better in this course is required for continuation in Organic Chemistry II (CHEM 3411).

The accompanying course schedule (syllabus) is approximate; it may be necessary to modify the schedule slightly from time to time. If such adjustments must be made, I will try to give you as much advance notice as possible.

CLASS PREPARATION & STUDYING: This course deals with the basics of organic chemistry and begins the study of the different functional groups encountered in this discipline. You will be expected to demonstrate an understanding of bonding and reactivity, familiarity with organic nomenclature, *and be able to apply your knowledge to supply answers to questions not directly covered in the class or text.* Memorization of some material may be helpful, but it is better to strive for broader understanding of concepts, rather than rote learning of facts and specific information. That said, there are some things that you will have to memorize.

You will find that new material builds on previous chapters; an ongoing review of material covered previously will be necessary as you progress through this course. *Do organic every day!* Read the text. Study your notes. Do the problems. You will find that your studies will be more effective if you try to understand basic concepts and the connections between them, rather than trying to memorize every little detail. A useful approach is to first review notes and class work from the previous class as soon as possible after that class. Then work the related problems within each section of the chapter and at the end of the chapter. Suggested problems will NOT be collected for grading, but it is to your advantage to work as many of them (and others) as you can; *it is likely that you will not succeed in this class if you don't do the problems.* You will also be responsible for online homework assignments that will be graded (see below). Finally, read the textbook material for the upcoming class.

Do not try to read a whole chapter all at once; you will find that taking the material in small “doses” will be more effective than trying to cover everything in one sitting. You should work example/review problems as you encounter them in the text, in order to immediately test your grasp of the material. If you have trouble, go back and work through that section again, *before* continuing on to the next section. If you don’t understand one concept, it is likely that everything that comes after it will be lost to you. Rote memorization is not the way to be successful in the long-term; while there is a fair amount of factual information which you must assimilate, the key is to strive to construct a logical framework on which to attach new facts. Be sure to seek help when anything is not clear. Write down your questions as they occur to you during your study, and get them answered. In class, do not make the mistake of trying to take too many notes. Rather, pay attention and try to think about the material as it’s presented. Ask for clarification on troubling points as we go along. Don’t be afraid to ask questions! Be assured that if you don’t understand something in class, there are at least two or three of your classmates who also have the same difficulty. Write down your questions as they occur to you during your study, and *ask them in class, lab, or during office hours, or send me an email. You may also post questions in the Discussion area of our Blackboard course.*

The assigned online homework assignments *will* be graded; they will count as much as an exam (10% of your overall grade; see below). Likewise, the online quizzes are also a significant part of your grade (10% of your overall grade). These exercises are intended to help you with your learning, as well as to help your grade.

You can expect to spend a minimum of 45 to 60 minutes per day outside of class in keeping up with your studies (six days a week), the homework online assignments, and the online quizzes. Don’t leave things until the night before the exam, or an hour before an online exercise is due--you will not have time to learn everything and get everything done if you do that. Trust me on this.

ANYONE WHO IS HAVING DIFFICULTIES IS STRONGLY ENCOURAGED TO SEEK HELP AS SOON AS POSSIBLE.

ATTENDANCE, CLASS PARTICIPATION & DROP POLICY: Attendance in class: You will not succeed if you don’t attend class. I will not usually take attendance, but that does *not* mean you don’t need to be in class. If you must miss a class due to illness or other grave circumstances, or due an official UCA activity, you should do the following: (1) let me know why you are absent; (2) get the lecture notes from a classmate; and, (3) check with me if there are any questions about the material. *YOU are responsible for all material presented in class, including verbal announcements,* missed in your absence.

Attendance at exams (and quizzes, if given in class) is mandatory. If you are sick on the day of an exam, or must miss an exam for some other LEGITIMATE, documentable reason, you must contact me as soon as possible, preferably before the exam; a phone call is preferable, but email is another option. If you personally cannot call, have someone contact me on your behalf. If I am not in my office, leave a message with my voice mail, or with the Chemistry Department secretary (501-450-3152); in catastrophic circumstances you might consider contacting the Student Services office (501-450-3416). I will return your call if you wish; when you leave your phone number, be sure to speak clearly and slowly! *If I don't hear from you by CLASS TIME of the day of the exam, the absence will be counted as unexcused, and a score of zero will be recorded for that test. This also applies to quizzes given in class, if any.* Make-up exams are inherently unfair to you and/or your classmates, and the administration of a make-up exam will be at my discretion. Excused absences will be taken into consideration in the final tally of scores. In general, ONLY illness or other grave circumstances will be considered as an excusable reason for missing an exam; the burden of proof will lie on the student. This also applies to the final exam--you know when it is; make your plans accordingly. By the way, failed alarm clocks, missing your ride, weddings, and your sister having her baby do NOT constitute valid excuses for missing a test (or any other in-class work). Neither does lack of preparation for an exam or having to leave early for vacation--*don't even ask.*

With regard to quizzes, whether in class or online: NO MAKE-UP QUIZZES WILL BE GIVEN. The same rules apply to excusing a quiz as apply to exams. If you miss a quiz in class, or miss the deadline for an online quiz, it’s a zero.

If you arrive late for a quiz or exam, you will NOT get extra time to complete it; you must turn in your paper at the same time as the rest of the class.

If your paper is not in my possession when I leave the room, I will not accept it, and you will be assigned a zero.

Attendance in laboratory is mandatory. You are expected to come to the lab section for which you are registered, unless prior arrangements have been made with me. Students missing two labs (not necessarily consecutively) without contacting me may be dropped from the course *with a failing grade (F)* without prior notice. There are NO dropped lab scores; an unexcused absence will earn a score of zero, which *will* count in your lab grade. There is no guarantee that students who miss lab will be able to make up missed work. In general, *the same rules apply to excusing missed lab work as apply to exams.*

If you know in advance of a valid schedule conflict, it is your responsibility to let me know well in advance so that alternate arrangements can be made.

DROP POLICY: Excessive absence without contacting me (four *consecutive* class periods missed OR two lab periods, *not necessarily consecutive*) will result in your being dropped without prior notice from the course with a failing grade (F).

GRADING--ASSIGNMENTS, EXAMINATIONS, AND QUIZZES:

Examinations: Four “hour” exams (I would rather we thought of them as *opportunities* for you to show off) will be given during the term, in addition to a comprehensive final. I will endeavor to stick to the dates as outlined in the class schedule. I will take up the

papers at the end of the period; any student whose paper is not in my possession when I leave the room will receive a grade of zero for that "opportunity."

Quizzes: In class quizzes may or may not be announced. Most quizzes will be administered on Blackboard. Online quizzes will be available for at least 24 hours (unless otherwise announced). In general, you will have at least 30 minutes to complete an online quiz, and multiple attempts may be allowed; details will be made available in the information given with the quiz. Do not leave taking a quiz till the last minute--your clock may not be the same as Blackboard's. The lowest two quiz scores will be dropped. *There will be NO make-up quizzes.*

Assignments: I have chosen to use an online homework tool from Sapling Learning for this class. You will have to pay for access in order to use this tool. These online assignments will count in your grade. I believe that this tool will be beneficial to you in your study; in many cases, if you get a wrong answer, you can redo the question, getting hints or other help. In order to offset the cost of this, I will provide all the laboratory material to you on *Blackboard*. Note: You have access to computers all over campus, such as in the library, the Math/Computer Science Tech Bldg, etc. A malfunctioning home computer will not be accepted as an excuse for not submitting assignments on time. To use a UCA computer, you must use your UCA log-on information; if you do not know how to log onto the UCA computer network, feel free to ask me.

This class is not graded on a "curve." You must meet the standards of performance established by previous classes I have taught in organic chemistry. I want to help you reach that standard. Come to my office for help *before* you get behind. You can ask questions during class and/or lab, as well as during my office hours (or by appointment outside of office hours), or you can email me. Occasionally, I may be available online (via the Chat Room in our *Blackboard* course) for a time during the evening before an exam. In addition, there are *FREE* tutoring services available to you, provided by the Chemistry Department (watch for flyers around the building) and UCA Tutoring Services (<http://uca.edu/success>). It is *your* responsibility to take advantage of these resources.

Lecture (80% of grade):

4 Exams @ 100 pts	400 pts
12 Quizzes @ 10 pts (drop 2 lowest quiz scores)	100 pts
Homework/Assignments	100 pts
Comprehensive Final 200 pts	200 pts
<hr/>	<hr/>
Total	800 pts

Grading Scale*:

<u>course percent</u>	<u>grade</u>
89.5 - 100 %	A
79.5 - 89.4 %	B
69.5 - 79.4 %	C
59.5 - 69.4 %	D

* (subject to change without notice)

To calculate your grade:

$$\text{course\%} = (0.8 * \text{lect\%}) + (0.2 * \text{lab\%})$$

Lab (20% of grade):

See lab information packet for details

ELECTRONIC INFORMATION: All UCA students have an email address, which can be accessed from off-campus. I may communicate with the whole class or individuals via email or on Blackboard, so be sure to check both frequently (at least every day). You are responsible for obtaining any information distributed electronically (e.g., through email, Blackboard, etc.--the lab packet mentioned above is an example). If you do not know how to access the internet or your email, I will help you, but it is up to you to ask for that help. There are enough computers on campus that you can accomplish this; a malfunctioning home computer is not a valid excuse for not getting such information (in a pinch, if you smile and ask me nice, I'll probably let you use my computer).

UCA's web site and myUCA:

UCA's home page: <http://uca.edu>

myUCA: Point your browser to <https://my.uca.edu>, or to <http://uca.edu> and click on the **myUCA** link at the top right.

UCA provides a number of services to students. To see a comprehensive list, visit the UCA web page <http://uca.edu/student/> (click on About > Departments links). In addition, there are many links to explore on **myUCA**.

Blackboard: In addition to the online quizzes, you may also access printable copies of handouts, lab materials, old exams and quizzes, and other information online through Blackboard.

To access Blackboard: The easiest way is to go there directly in your browser. The link is: <https://bblearn.uca.edu/> Use your regular UCA login information. Another way is to log in through **myUCA**: Point your browser to <https://myuca.edu>, or to <http://uca.edu> and click on the **myUCA** link at the top right. Once in **myUCA**, you should find the Blackboard link under the "Most Popular" links; you can click on the star to put that into your **myUCA** Favorites. **NOTE:** You will need to allow pop-up windows in your browser for quizzes and some assignments in Blackboard to work properly.

You will need to have Adobe Acrobat Reader installed on your computer to read most of the online files. To get this free program, click on the appropriate link in our Blackboard course (follow the links: Class & Lab Resources > Useful Downloads & Links > Useful software downloads > Adobe Acrobat Reader), or point your web browser to: <http://get.adobe.com/reader> and follow the directions there to download and install the program.

You can print the files directly from Acrobat Reader in your browser (you may need to install the browser plug-in first), or you can save them to your hard drive or some other storage medium for later printing (this usually works best). Please note that printing problems (either directly from Blackboard or from Acrobat) usually have to do with the settings for your browser and/or printer, and not with the content of my web pages. Problems may also result from using an older version of your web browser and/or Acrobat Reader. While I can make suggestions, I am not able to diagnose every problem you might encounter. For computer problems, you can contact the UCA Information Systems & Technology Help Desk at (501) 450-3107 or email helpdesk@uca.edu. They are located in Burdick Hall 101. See their web page at <http://uca.edu/ist/need-help/help-desk/> for their hours.

Sapling Learning Software: Dr. Manion and I began using this software in our Organic Chem classes in the Spring 2013 semester; we felt that the online homework was helpful, and many students agreed. However, like anything else, how effective it will be for you will depend to a large degree on the attitude you bring as you approach the work.

To access Sapling Learning:

See the online instructions at:

<https://community.macmillan.com/docs/DOC-6554-sapling-learning-higher-ed-table-of-contents-for-students>

This course requires payment. You will select a payment option and follow the remaining instructions. (By the way, if you are waiting on an excess funds check from UCA, there may be a "grace period" before you have to pay.)

NOTE: No Key code is required; if you bought an access card, you will enter its code (Access Card Code) when you get to the part where you have to pay.

Once you have registered and enrolled in the Sapling Learning course, you can log in at any time to complete or review your homework assignments. During sign up - and throughout the term - if you have any technical problems or grading issues, send an email to support@saplinglearning.com explaining the issue. The Sapling support team is almost always more able (and faster) to resolve issues than I can.

ACADEMIC POLICIES MAJORS, MINORS, AND OTHER INFORMATION: See the Undergraduate Bulletin at <http://uca.edu/ubulletin/>

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 thirteenth week of instruction through the end of finals week (November 14 - December 11) by logging in to myUCA. The easiest way to find the link is to use the Search on the menu bar.

CRITICAL DATES & DEADLINES: See the Academic Calendar online at <http://uca.edu/registrar/academic-calendar/>

SPECIAL PROBLEMS: If you find that at some time during the semester, personal problems are keeping you from completing your coursework (in this class or any other), you may find it beneficial to visit the Counseling Center. All students are entitled to free, confidential, professional counseling. The office is located in the Student Health Center, Suite 327, phone number (501) 450-3138. The Counseling Center web page is located at <http://uca.edu/counseling/>

In addition to the Counseling Center, the office of the Vice President of Student Services is located in the Student Health Center, Suite 210, and is open to assist individual students and student groups in matters concerning them. Office hours are 8:00 am to 4:30 pm, Monday through Friday. The office can be reached by calling (501) 450-3416; fax (501) 450-3236. Information about this office may be found online (**myUCA**) and at <http://uca.edu/student>

MANNERS: I will treat you with courtesy and respect, but I expect the same in return. Disruptions in class will not be tolerated. That includes behavior, and also means that pagers, cell phones, beepers, and any other electronic devices that make noise are to be turned off or turned to silent *before* you come to class. You should not be texting or otherwise using your phone during class. I also expect you to be quiet when I am talking--that means no casual conversation during lecture; that also means not setting up lab equipment or measuring out chemicals during lab lecture. Nor should you be reading a book or the newspaper, working on lab reports, or doing homework, etc. First offense--a warning. Second offense--you will be asked to leave, and will receive a zero for any work that is graded during that class or lab, and you will not be able to make up any work missed. Third offense--you will be dropped from the class with a failing grade (*F*).

The “fine print” - mandated by UCA

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. See: <http://uca.edu/integrity>

“Academic misconduct” includes (but is not necessarily limited to) such activities as cheating, plagiarism, copying from other students’ papers, copying from published sources without appropriate documentation/citation, and presenting someone else’s work as one’s own. This applies to laboratory work as well as exams and quizzes. You might want to check out the following link: <http://uca.edu/integrity/files/2013/11/everything-plagiarism.pdf>

STUDENTS WITH DISABILITIES: 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 Resource Center at (501) 450-3613. Location: Student Health Center, Suite 212. Online: <http://uca.edu/disability/>

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 <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.

The EPS specific to Laney-Manion Hall and the Laney-Manion Hall Annex is available at <http://uca.edu/mysafety/files/2013/06/bep-laney-annex-prince-eps.pdf> The complete Laney-Manion Building Emergency plan is available at <http://uca.edu/chemistry/safety-matters/>

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.*

UCA STUDENT HANDBOOK: You should familiarize yourself with the policies listed in the UCA Student Handbook, particularly the following: Sexual Harassment Policy; Academic Policies.

The Handbook is available online at the following URL: <http://uca.edu/student/student-handbook/>

Some Important Dates - <http://uca.edu/registrar/academic-calendar/>

Wed, Aug 30 th	Last date to register for full semester classes
Fri, Nov 10 th	Last date to drop full semester class with a W grade (after this date, a grade of A, B, C, D, or F will be assigned) -- there are no longer WP/WF grades
Sat, Dec 16 th	Winter Commencement
Mon, Dec 18 th	Grades due at noon

CHEMISTRY 2401 ORGANIC CHEMISTRY I FALL 2017
CLASS SCHEDULE DR. K. C. CAVENDER

LECTURE

LABORATORY

Aug 25	Introduction		
Aug 25 - 30	Ch 1 Structure and Bonding	Aug 30, 31	Check in. Safety. General Chemistry Review. (dry-lab) ★
Sept 1	Ch 2 Acids and Bases	Sept 6, 7	Natural Dyes
Monday, September 4 - no class - Labor Day Holiday			
Sept 6 - 8	Ch 2 continued		
Sept 11 - 18	Ch 3 Introduction to Organic Molecules and Functional Groups	Sept 13, 14	IR Spectroscopy (dry-lab; read sections 13.5 - 13.8 before lab) ★
Sept 20	Ch 4 Alkanes	Sept 20, 21	Thin-Layer Chromatography
Fri, Sept 22	Υ EXAM I (Ch 1 - 3)		
Sept 25 - 27	Ch 4 continued	Sept 27, 28	¹³ C NMR Spectroscopy & DEPT (dry-lab; read sections 14.1 & 14.11 before lab) ★
Sept 29 - Oct 6	Ch 5 Stereochemistry	Oct 4, 5	Stereochemistry (dry-lab; bring your model kits if you have them) ★
Oct 6 - 11	Ch 6 Understanding Organic Reactions	Oct 11, 12	Determination of Melting Points
Fri, Oct 13	Υ EXAM II (Ch 4 - 6)		
Oct 16 - 18	Ch 7 Alkyl Halides and Nucleophilic Substitution	Oct 18, 19	No lab
☺ Fall Break Oct 19 - 22 ☺			
Oct 23 - 25	Ch 7 continued	Oct 25, 26	Nucleophilic Substitution at Saturated Carbon: S _N 1 & S _N 2 Rxns (Part B; Part C as demo)
Oct 27 - Nov 1	Ch 8 Alkyl Halides and Elimination Rxns	Nov 1, 2	Green Chemistry (dry-lab) ★
Fri, Nov 3	Υ EXAM III (Ch 7 & 8)	Nov 8, 9	Dehydration of 2-Methylbutan-2-ol
Nov 6 - 13	Ch 9 Alcohols, Ethers, and Epoxides	Nov 15, 16	Epoxidation of Carvone
Nov 13 - 20	Ch 10 Alkenes	Nov 22, 23	No lab
☺ Thanksgiving Break Nov 22 - 26 ☺			
Nov 27	Ch 11 Alkynes	Nov 29, 30	Brominating Alkenes
Wed, Nov 29	Υ EXAM IV (Ch 9 & 10)		
Dec 1 - 6	Ch 11 cont.		
Dec 8	Study Day (no class, but we <u>could</u> have a review session--let me know if you want to)	Wed, Dec 13	Υ FINAL EXAM 2:00 - 4:00 pm

★ Lab does not require a write-up in the lab notebook